Report No.

FIRE SAFETY ANALYSIS OF THE POLAR ICEBREAKER REPLACEMENT DESIGN

VOLUME III - PART I

BY

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16. Abstract

This report documents the developmental application of the Ship Fire Safety Engineering Method (SFSEM) to the fire safety analysis of the Polar Icebreaker Replacement (PIR) design. The passive and active fire protection were analyzed in the integrated framework provided by SFSEM for every compartment on the PIR. Conventional fire protection engineering was employed whenever information necessary for SFSEM was not available. Recommendations for alternative solutions to fire safety discrepancies and guidelines for fire protection systems on the PIR are provided.

Five levels of fire protection were found in the PIR design. Passive fire protection is the most significant factor in meeting the fire safety objectives. The major improvement recommended for passive fire protection is to subdivide the boiler room. Refinements are recommended for Active Fire Protection systems but the most significant recommendation is for improved and integrated automatic fire detection. With these changes the fire safety of every compartment is well within the fire safety objectives established. Smoke control was identified as the area where the most significant gains could be made in fire protection and life safety.

The Ship Fire Safety Engineering Method proved to be an effective method for integrating the five levels of fire protection on the PIR. An extensive data base was developed which will greatly facilitate future ship fire safety analyses. Output from SFSEM would be very useful in damage control planning.

This report is presented in three volumes. Volume I presents the recommended improvements to the PIR and the analysis which lead to them. Volume II presents the data necessary to conduct the analysis, and Volume III presents fire safety summaries for each compartment and its barriers.

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METRIC CONVERSION FACTORS

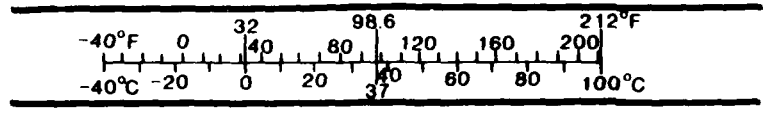
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply By	To Find	Symbol
	LENGTH			
in	inches	* 2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (WEIGHT)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (EXACT)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures. Price $2.25. SD Catalog No. C13 10.286.

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply By	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (WEIGHT)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	0.125	cups	c
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (EXACT)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



FIRE SAFETY ANALYSIS OF THE
POLAR ICEBREAKER REPLACEMENT DESIGN
VOLUME III

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APPENDIX N

PIR Compartment and Barrier Fire Safety Summaries

Appendix N provides a one page summary of detailed information about each compartment considered in the analysis and a one page summary of the barriers enclosing that compartment. They are arranged in numerical order by compartment number. Compartments not analyzed and therefore omitted have use identifiers of F,J,TU,V, and W. Prefacing this information is an alphabetical listing of compartments and their ID's. This reference is included to aid in locating compartments of interest. In the Barrier Fire Safety Summary, each barrier is identified by the number and name of the adjoining compartment.

Glossary

Unacceptable Loss - A rating assigned to each compartment assessing the magnitude of the fire loss needed to cause loss of ship mission capabilities. Assigned values range from 1 (where a fire simply reaching Established Burning in the compartment would threaten mission performance) to 8 (where all compartments of one type lost to fire would be considered unacceptable.)

Frequency uloss - The threshold frequency of the unacceptable loss. It is expressed as the number of times the compartment can be lost per ship year.

Frequency of EB - The expected frequency of established burning expressed as the ratio of number of fires anticipated per year. The data is based on historical records of fire casualties.

I - A percentage which represents the probability that the fire will terminate itself

A - A percentage which represents the probability that the fire will be suppressed by an automated system.

M - A percentage which represents the probability that the fire will be suppressed manually (by damage control teams).

FRI Time - The time when the compartment as room of origin reaches Full Room Involvement or Flashover measured from the time it has reached Established Burning.

Mat ID - A code indicating the type of material composing the barrier. Types include:

W0	Zero strength bulkhead
W1	Expanded metal "screening"
W2	Nomex honeycomb core panel-plastic laminate both sides
W3	Nomex honeycomb core panel-stainless steel both sides
W4	Nomex honeycomb core panel-plastic laminate & thermal insulation
W5	Steel joiner
W6	Structural steel
W7	Steel joiner with thermal insulation
W8	Structural steel with thermal insulation
F0	Zero strength deck
F1	Aluminum grating
F2	Steel grating
F3	Steel deck
F4	Steel deck with poured floor or tile (1/4" thick)
C0	Zero strength overhead
C1	Aluminum grating
C2	Steel grating
C3	Steel deck
C4	Steel overhead with poured floor or tile (1/4" thick)

D/H - The number of doors or hatches in the barrier.

Tbar - The propensity for failure of the barrier through a thermal failure. The Tbar value, range 0-300, represents the number of 1000's BTU's that the barrier can withstand.

Dbar - The propensity for failure of the barrier through a durability failure. The Dbar value, range 0-300, represents the number of 1000's BTU's that the barrier can withstand.

% Heat Rel - The percentage of residual heat which would be transferred from one room to the next if the barrier has a durability failure.

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-100-0-LL WARDROOM & LOUNGE

USE: LL Lounge areas

AREA: 1182 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 11,824 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0006

FUEL LOAD: 24,800 BTUs/sq.ft.
From Lounge Burnout Rpt. 000278

VENTILATION: 2,956 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 800 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	10	0	30
Tbar Failure	15	10	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 10% of time in port and 40% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-100-0-LL WARDROOM & LOUNGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-1-TS	STAIRCASE	W6	0	20.0	10	100	5
01-100-1-TS	STAIRCASE	W5	0	145.0	5	80	5
01-100-2-LP	PASSAGE	W2	0	180.0	25	40	30
01-100-2-LP	PASSAGE	W2	1	413.0	25	40	30
01-114-1-LP	PASSAGE	W2	1	115.0	25	40	30
01-126-1-Q	OFFICER PANTRY	W3	1	113.0	25	60	25
01-126-1-Q	OFFICER PANTRY	W3	0	180.0	25	60	25
01-138-1-T	DUMB WAITER	W5	0	40.0	5	80	5
1-100-0-LP	PASSAGE	F3	0	229.0	25	300	5
1-105-0-Q	GALLEY	F3	0	881.4	25	300	5
1-119-1-Q	SCULLERY	F3	0	72.0	25	300	5
02-100-1-LL	CO LOUNGE	C3	0	397.4	10	100	5
02-100-2-L	CO CABIN	C3	0	313.2	10	100	5
02-120-2-L	OFFICER SR	C3	0	288.9	10	100	5
02-129-1-Q	PANTRY	C3	0	36.0	10	100	5
02-132-2-LW	WR WC & SHR	C3	0	58.5	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-100-1-TS STAIRCASE

USE: TS Staircases

AREA: 87 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 870 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 174 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-100-1-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-0-LL	WARDROOM & LOUNGE	W6	0	20.0	10	100	5
01-100-0-LL	WARDROOM & LOUNGE	W5	0	145.0	5	80	5
01-100-3-L	OFFICER SR	W5	0	145.0	5	80	5
01-114-1-LP	PASSAGE	W6	1	40.0	10	100	5
1-100-1-TS	STAIRCASE	F3	1	87.0	25	300	5
02-100-3-TS	STAIRCASE	C3	1	71.4	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-100-2-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 446 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 4,462 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 892 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 500 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-100-2-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-0-LL	WARDROOM & LOUNGE	W2	0	180.0	25	40	30
01-100-0-LL	WARDROOM & LOUNGE	W2	1	413.0	25	40	30
01-100-4-L	CPO BERTHING	W2	1	50.0	25	40	30
01-106-2-LW	WR WC & SHR	W3	0	80.0	25	60	25
01-113-2-L	CPO BERTHING	W2	1	30.0	25	40	30
01-114-1-LP	PASSAGE	W0	0	40.0	0	0	100
01-117-2-LW	WR WC & SHR	W3	0	90.0	25	60	25
01-125-2-LW	WR WC & SHR	W3	0	80.0	25	60	25
01-125-4-L	CPO BERTHING	W2	1	40.0	25	40	30
01-125-4-L	CPO BERTHING	W6	0	180.0	10	100	5
01-142-2-L	CPO BERTHING	W2	1	105.0	25	40	30
01-142-2-L	CPO BERTHING	W2	0	140.0	25	40	30
01-145-0-TU	UPTAKE 1	W8	0	43.0	80	100	5
01-145-0-TU	UPTAKE 1	W8	0	160.0	80	100	5
01-145-2-TS	STAIRCASE	W5	0	60.0	5	80	5
01-145-2-TS	STAIRCASE	W5	0	60.0	5	80	5
01-145-2-TS	STAIRCASE	W5	0	117.0	5	80	5
01-154-2-LW	WR WC & SHR	W3	0	90.0	25	60	25
01-162-2-LP	PASSAGE	W6	1	80.0	10	100	5
01-162-4-LW	WR WC & SHR	W6	0	20.0	10	100	5
1-100-0-LP	PASSAGE	F3	0	25.1	25	300	5
1-100-2-LP	PASSAGE	F3	0	97.2	25	300	5
1-105-0-Q	GALLEY	F3	0	228.1	25	300	5
1-124-2-LL	CPO MESSROOM & LOUNGE	F3	0	70.0	25	300	5
1-145-2-TS	STAIRCASE	F3	0	25.8	25	300	5
02-100-2-L	CO CABIN	C3	0	69.6	10	100	5
02-121-2-LP	PASSAGE	C3	0	253.2	10	100	5
02-136-2-LW	WR WC & SHR	C3	0	34.4	10	100	5
02-136-4-L	OFFICER SR	C3	0	52.8	10	100	5
02-145-2-TS	STAIRCASE	C3	0	1.8	10	100	5
02-158-2-A	GEAR LOCKER	C3	0	24.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-100-3-L OFFICER SR

USE: L2 Berthing Space for 2

AREA: 257 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 2,575 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 13,115 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 515 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-100-3-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-1-TS	STAIRCASE	W5	0	145.0	5	80	5
01-111-1-LW	WR WC & SHR	W3	0	70.0	25	60	25
01-111-1-LW	WR WC & SHR	W3	0	70.0	25	60	25
01-111-1-LW	WR WC & SHR	W6	1	95.0	10	100	5
01-114-1-LP	PASSAGE	W2	1	35.0	25	40	30
01-118-1-LW	WR WC & SHR	W3	0	30.0	25	60	25
01-118-3-L	OFFICER SR	W2	0	55.0	25	40	30
1-100-3-LP	PASSAGE	F3	0	65.0	25	300	5
1-100-5-LL	CREW MESS	F3	0	192.5	25	300	5
02-100-5-L	CHIEF SCIENTIST SR	C3	0	210.7	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-100-4-L CPO BERTHING

USE: L2 Berthing Space for 2

AREA: 186 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,860 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 32,800 BTUs/sq.ft.
From CPO Berthing Compartment Tests, MFRB 000134

VENTILATION: 372 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	15	3	0	30
Tbar Failure	10	3	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-100-4-L CPO BERTHING

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W2	1	50.0	25	40	30
01-106-2-LW	WR WC & SHR	W6	1	60.0	10	100	5
01-106-2-LW	WR WC & SHR	W3	0	80.0	25	60	25
01-113-2-L	CPO BERTHING	W2	0	120.0	25	40	30
1-100-2-LP	PASSAGE	F3	0	20.0	25	300	5
1-100-4-LW	WR & SHR	F3	0	26.0	25	300	5
1-100-6-Q	SHIP LIBRARY	F3	0	140.0	25	300	5
02-100-4-L	CO SR	C3	0	139.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-106-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 48 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 480 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 120 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-106-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W3	0	80.0	25	60	25
01-100-4-L	CPO BERTHING	W6	1	60.0	10	100	5
01-100-4-L	CPO BERTHING	W3	0	80.0	25	60	25
01-113-2-L	CPO BERTHING	W3	0	60.0	25	60	25
1-100-2-LP	PASSAGE	F3	0	32.0	25	300	5
1-100-6-Q	SHIP LIBRARY	F3	0	16.0	25	300	5
02-100-4-L	CO SR	C3	0	48.0	10	100	5
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Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-111-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 66 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 665 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 166 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-111-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-3-L	OFFICER SR	W3	0	70.0	25	60	25
01-100-3-L	OFFICER SR	W3	0	70.0	25	60	25
01-100-3-L	OFFICER SR	W6	1	95.0	10	100	5
01-118-1-LW	WR WC & SHR	W3	0	50.0	25	60	25
01-118-3-L	OFFICER SR	W3	0	45.0	25	60	25
1-100-3-LP	PASSAGE	F3	0	7.0	25	300	5
1-100-5-LL	CREW MESS	F3	0	59.5	25	300	5
02-100-5-L	CHIEF SCIENTIST SR	C3	0	46.5	10	100	5
02-116-1-LW	WR WC & SHR	C3	0	20.0	10	100	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-113-2-L CPO BERTHING

USE: L2 Berthing Space for 2

AREA: 162 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,620 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 32,800 BTUs/sq.ft.
From CPO Berthing Compartment Tests, MFRB 000134

VENTILATION: 324 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	15	3	0	30
Tbar Failure	10	3	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-113-2-L CPO BERTHING

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W2	1	30.0	25	40	30
01-100-4-L	CPO BERTHING	W2	0	120.0	25	40	30
01-106-2-LW	WR WC & SHR	W3	0	60.0	25	60	25
01-117-2-LW	WR WC & SHR	W3	1	60.0	25	60	25
01-117-2-LW	WR WC & SHR	W3	0	90.0	25	60	25
01-125-4-L	CPO BERTHING	W2	0	120.0	25	40	30
1-100-2-LP	PASSAGE	F3	0	12.0	25	300	5
1-100-6-Q	SHIP LIBRARY	F3	0	138.0	25	300	5
1-124-2-LL	CPO MESSROOM & LOUNGE	F3	0	12.0	25	300	5
02-100-4-L	CO SR	C3	0	63.0	10	100	5
02-113-2-LW	WR WC & SHR	C3	0	39.0	10	100	5
02-120-4-LW	WR WC & SHR	C3	0	15.0	10	100	5
02-120-6-L	VISITOR SR	C3	0	45.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-114-1-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 377 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 3,774 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 754 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 1000 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-114-1-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-0-LL	WARDROOM & LOUNGE	W2	1	115.0	25	40	30
01-100-1-TS	STAIRCASE	W6	1	40.0	10	100	5
01-100-2-LP	PASSAGE	W0	0	40.0	0	0	100
01-100-3-L	OFFICER SR	W2	1	35.0	25	40	30
01-118-1-LW	WR WC & SHR	W3	0	50.0	25	60	25
01-118-3-L	OFFICER SR	W2	1	85.0	25	40	30
01-126-1-Q	OFFICER PANTRY	W3	0	140.0	25	60	25
01-126-1-Q	OFFICER PANTRY	W3	1	153.0	25	60	25
01-132-1-LW	WR WC & SHR	W3	0	55.0	25	60	25
01-132-3-L	OFFICER SR	W2	1	43.0	25	40	30
01-132-3-L	OFFICER SR	W2	0	180.0	25	40	30
01-138-1-T	DUMB WAITER	W5	0	40.0	5	80	5
01-145-0-TU	UPTAKE 1	W8	0	77.0	80	100	5
01-145-0-TU	UPTAKE 1	W8	0	160.0	80	100	5
01-146-1-LW	WR WC & SHR	W3	0	60.0	25	60	25
01-146-1-LW	WR WC & SHR	W3	0	77.0	25	60	25
01-146-3-L	OFFICER SR	W2	0	80.0	25	40	30
01-146-3-L	OFFICER SR	W2	1	83.0	25	40	30
01-153-1-A	STOREROOM	W2	0	60.0	25	40	30
01-153-1-A	STOREROOM	W2	1	83.0	25	40	30
01-162-3-LP	PASSAGE	W6	1	40.0	10	100	5
1-100-0-LP	PASSAGE	F3	0	14.0	25	300	5
1-100-3-LP	PASSAGE	F3	0	80.0	25	300	5
1-100-5-LL	CREW MESS	F3	0	56.0	25	300	5
1-119-1-Q	SCULLERY	F3	0	56.0	25	300	5
1-132-1-Q	INCINERATOR ROOM	F3	0	125.2	25	300	5
1-145-1-T	MACHINERY HOIST ROOM	F3	0	46.2	25	300	5
02-115-1-LP	PASSAGE	C3	0	275.2	10	100	5
02-136-3-L	OFFICER SR	C3	0	56.0	10	100	5
02-145-1-A	STOREROOM	C3	0	46.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-117-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 54 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 540 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 135 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-117-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W3	0	90.0	25	60	25
01-113-2-L	CPO BERTHING	W3	1	60.0	25	60	25
01-113-2-L	CPO BERTHING	W3	0	90.0	25	60	25
01-125-2-LW	WR WC & SHR	W3	0	60.0	25	60	25
1-100-2-LP	PASSAGE	F3	0	36.0	25	300	5
1-100-6-Q	SHIP LIBRARY	F3	0	16.0	25	300	5
1-124-2-LL	CPO MESSROOM & LOUNGE	F3	0	2.0	25	300	5
02-113-2-LW	WR WC & SHR	C3	0	24.0	10	100	5
02-120-4-LW	WR WC & SHR	C3	0	30.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-118-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 40 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 400 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 100 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-118-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-3-L	OFFICER SR	W3	0	30.0	25	60	25
01-111-1-LW	WR WC & SHR	W3	0	50.0	25	60	25
01-114-1-LP	PASSAGE	W3	0	50.0	25	60	25
01-118-3-L	OFFICER SR	W3	0	50.0	25	60	25
01-118-3-L	OFFICER SR	W3	1	80.0	25	60	25
1-100-3-LP	PASSAGE	F3	0	20.0	25	300	5
1-100-5-LL	CREW MESS	F3	0	20.0	25	300	5
02-100-5-L	CHIEF SCIENTIST SR	C3	0	14.0	10	100	5
02-116-1-LW	WR WC & SHR	C3	0	14.0	10	100	5
02-122-1-LW	WR WC & SHR	C3	0	12.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-118-3-L OFFICER SR

USE: L2 Berthing Space for 2

AREA: 203 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 2,030 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 16,032 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 406 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-118-3-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-3-L	OFFICER SR	W2	0	55.0	25	40	30
01-111-1-LW	WR WC & SHR	W3	0	45.0	25	60	25
01-114-1-LP	PASSAGE	W2	1	85.0	25	40	30
01-118-1-LW	WR WC & SHR	W3	0	50.0	25	60	25
01-118-1-LW	WR WC & SHR	W3	1	80.0	25	60	25
01-132-1-LW	WR WC & SHR	W3	0	60.0	25	60	25
01-132-3-L	OFFICER SR	W2	0	120.0	25	40	30
1-100-3-LP	PASSAGE	F3	0	34.0	25	300	5
1-100-5-LL	CREW MESS	F3	0	169.0	25	300	5
02-100-5-L	CHIEF SCIENTIST SR	C3	0	21.0	10	100	5
02-116-1-LW	WR WC & SHR	C3	0	14.0	10	100	5
02-122-1-LW	WR WC & SHR	C3	0	46.5	10	100	5
02-122-3-L	OFFICER SR	C3	0	121.5	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-125-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 48 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 480 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 120 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-125-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W3	0	80.0	25	60	25
01-117-2-LW	WR WC & SHR	W3	0	60.0	25	60	25
01-125-4-L	CPO BERTHING	W3	1	60.0	25	60	25
01-125-4-L	CPO BERTHING	W3	0	80.0	25	60	25
1-100-2-LP	PASSAGE	F3	0	32.0	25	300	5
1-124-2-LL	CPO MESSROOM & LOUNGE	F3	0	16.0	25	300	5
02-120-4-LW	WR WC & SHR	C3	0	12.0	10	100	5
02-120-6-L	VISITOR SR	C3	0	36.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-125-4-L CPO BERTHING

USE: L2 Berthing Space for 2

AREA: 168 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,680 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 32,800 BTUs/sq.ft.
From CPO Berthing Compartment Tests, MFRB 000134

VENTILATION: 336 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	15	3	0	30
Tbar Failure	10	3	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-125-4-L CPO BERTHING

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W2	1	40.0	25	40	30
01-100-2-LP	PASSAGE	W6	0	180.0	10	100	5
01-113-2-L	CPO BERTHING	W2	0	120.0	25	40	30
01-125-2-LW	WR WC & SHR	W3	1	60.0	25	60	25
01-125-2-LW	WR WC & SHR	W3	0	80.0	25	60	25
1-100-2-LP	PASSAGE	F3	0	16.0	25	300	5
1-124-2-LL	CPO MESSROOM & LOUNGE	F3	0	152.0	25	300	5
02-120-4-LW	WR WC & SHR	C3	0	6.0	10	100	5
02-120-6-L	VISITOR SR	C3	0	144.0	10	100	5
02-136-2-LW	WR WC & SHR	C3	0	8.0	10	100	5
02-136-4-L	OFFICER SR	C3	0	10.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-126-1-Q OFFICER PANTRY

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 259 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 2,594 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0021

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 6,485 cu ft/min EXCHANGE TIME: 0.4 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	90	6	0	20
Tbar Failure	70	6	0	40
Dbar Failure	50	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 60% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-126-1-Q OFFICER PANTRY

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-0-LL	WARDROOM & LOUNGE	W3	1	113.0	25	60	25
01-100-0-LL	WARDROOM & LOUNGE	W3	0	180.0	25	60	25
01-114-1-LP	PASSAGE	W3	0	140.0	25	60	25
01-114-1-LP	PASSAGE	W3	1	153.0	25	60	25
01-138-1-T	DUMB WAITER	W5	0	40.0	5	80	5
01-138-1-T	DUMB WAITER	W5	1	40.0	5	80	5
1-105-0-Q	GALLEY	F3	0	75.2	25	300	5
1-119-1-Q	SCULLERY	F3	0	54.0	25	300	5
1-132-1-Q	INCINERATOR ROOM	F3	0	130.2	25	300	5
02-100-1-LL	CO LOUNGE	C3	0	59.4	10	100	5
02-129-1-Q	PANTRY	C3	0	200.0	10	100	5
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			3				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-132-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 33 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 330 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 82 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-132-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-114-1-LP	PASSAGE	W3	0	55.0	25	60	25
01-118-3-L	OFFICER SR	W3	0	60.0	25	60	25
01-132-3-L	OFFICER SR	W3	1	55.0	25	60	25
01-132-3-L	OFFICER SR	W3	0	60.0	25	60	25
1-100-3-LP	PASSAGE	F3	0	22.0	25	300	5
1-100-5-LL	CREW MESS	F3	0	11.0	25	300	5
02-122-3-L	OFFICER SR	C3	0	27.0	10	100	5
02-136-1-LW	WR WC & SHR	C3	0	6.0	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-132-3-L OFFICER SR

USE: L2 Berthing Space for 2

AREA: 143 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,434 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 13,223 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 286 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-132-3-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-114-1-LP	PASSAGE	W2	1	43.0	25	40	30
01-114-1-LP	PASSAGE	W2	0	180.0	25	40	30
01-118-3-L	OFFICER SR	W2	0	120.0	25	40	30
01-132-1-LW	WR WC & SHR	W3	1	55.0	25	60	25
01-132-1-LW	WR WC & SHR	W3	0	60.0	25	60	25
1-100-3-LP	PASSAGE	F3	0	17.2	25	300	5
1-100-5-LL	CREW MESS	F3	0	126.2	25	300	5
02-122-3-L	OFFICER SR	C3	0	54.0	10	100	5
02-136-1-LW	WR WC & SHR	C3	0	36.4	10	100	5
02-136-3-L	OFFICER SR	C3	0	53.0	10	100	5
			--				
			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-138-1-T DUMB WAITER

USE: T Elevators, dumb waiters

AREA: 16 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 160 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 4,000 BTUs/sq.ft.
Accumulated dust and grease and cable insulation

VENTILATION: 80 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	30	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-138-1-T DUMB WAITER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-0-LL	WARDROOM & LOUNGE	W5	0	40.0	5	80	5
01-114-1-LP	PASSAGE	W5	0	40.0	5	80	5
01-126-1-Q	OFFICER PANTRY	W5	0	40.0	5	80	5
01-126-1-Q	OFFICER PANTRY	W5	1	40.0	5	80	5
1-138-1-T	DUMB WAITER	F3	0	15.2	25	300	5
02-138-1-T	DUMB WAITER	C3	0	15.2	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-142-2-L CPO BERTHING

USE: L4 Berthing Space for 4

AREA: 224 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 2,244 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 18,367 BTUs/sq.ft.
No. of people x 160/compartment area

VENTILATION: 280 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 225 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	10	3	0	30
Tbar Failure	5	3	0	40
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-142-2-L CPO BERTHING

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W2	1	105.0	25	40	30
01-100-2-LP	PASSAGE	W2	0	140.0	25	40	30
01-154-2-LW	WR WC & SHR	W3	0	52.0	25	60	25
01-154-2-LW	WR WC & SHR	W3	1	88.0	25	60	25
01-162-6-L	CPO BERTHING	W6	0	88.0	10	100	5
1-124-2-LL	CPO MESSROOM & LOUNGE	F3	0	224.4	25	300	5
02-136-4-L	OFFICER SR	C3	0	84.0	10	100	5
02-148-2-L	OFFICER SR	C3	0	114.1	10	100	5
02-152-2-LW	WR WC & SHR	C3	0	26.3	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-145-2-TS STAIRCASE

USE: TS Staircases

AREA: 70 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 702 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 140 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-145-2-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W5	0	60.0	5	80	5
01-100-2-LP	PASSAGE	W5	0	60.0	5	80	5
01-100-2-LP	PASSAGE	W5	0	117.0	5	80	5
01-145-0-TU	UPTAKE 1	W8	0	117.0	80	100	5
1-145-2-TS	STAIRCASE	F3	1	70.2	25	300	5
02-145-2-TS	STAIRCASE	C3	1	70.2	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-146-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 46 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 462 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 0 BTUs/sq.ft.

VENTILATION: 115 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-146-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-114-1-LP	PASSAGE	W3	0	60.0	25	60	25
01-114-1-LP	PASSAGE	W3	0	27.0	25	60	25
01-146-3-L	OFFICER SR	W3	1	60.0	25	60	25
01-146-3-L	OFFICER SR	W3	0	27.0	25	60	25
1-100-5-LL	CREW MESS	F3	0	46.2	25	300	5
02-136-3-L	OFFICER SR	C3	0	10.2	10	100	5
02-146-1-L	OFFICER SR	C3	0	36.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-146-3-L OFFICER SR

USE: L Living quarters/medical/dental areas

AREA: 177 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,778 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 20,000 BTUs/sq.ft.

VENTILATION: 355 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 35% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-146-3-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-114-1-LP	PASSAGE	W2	0	80.0	25	40	30
01-114-1-LP	PASSAGE	W2	1	83.0	25	40	30
01-146-1-LW	WR WC & SHR	W3	1	60.0	25	60	25
01-146-1-LW	WR WC & SHR	W3	0	77.0	25	60	25
01-162-5-A	ARCTIC GEAR LOCKER--OFFIC	W6	0	140.0	10	100	5
1-100-5-LL	CREW MESS	F3	0	177.8	25	300	5
02-136-3-L	OFFICER SR	C3	0	13.6	10	100	5
02-146-1-L	OFFICER SR	C3	0	113.1	10	100	5
02-154-1-LW	WR WC & SHR	C3	0	51.1	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-153-1-A STOREROOM

USE: AS Storerooms

AREA: 49 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 498 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,600,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 49 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	3	0	30
Tbar Failure	20	3	0	20
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-153-1-A STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-114-1-LP	PASSAGE	W2	0	60.0	25	40	30
01-114-1-LP	PASSAGE	W2	1	83.0	25	40	30
01-145-0-TU	UPTAKE 1	W8	0	83.0	80	100	5
01-162-1-TS	STAIRCASE	W6	0	60.0	10	100	5
1-145-1-T	MACHINERY HOIST ROOM	F3	0	1.8	25	300	5
1-154-1-A	STOREROOM	F3	0	48.0	25	300	5
02-145-1-A	STOREROOM	C3	0	49.8	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-154-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 45 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 458 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 114 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-154-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W3	0	90.0	25	60	25
01-142-2-L	CPO BERTHING	W3	0	52.0	25	60	25
01-142-2-L	CPO BERTHING	W3	1	88.0	25	60	25
01-162-4-LW	WR WC & SHR	W6	0	30.0	10	100	5
01-162-6-L	CPO BERTHING	W6	0	22.0	10	100	5
1-124-2-LL	CPO MESSROOM & LOUNGE	F3	0	46.8	25	300	5
02-152-2-LW	WR WC & SHR	C3	0	46.8	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-162-1-TS STAIRCASE

USE: TS Staircases

AREA: 96 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 960 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 192 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-162-1-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-153-1-A	STOREROOM	W6	0	60.0	10	100	5
01-162-0-TU	UPTAKE 2	W8	0	127.0	80	100	5
01-162-3-LP	PASSAGE	W5	0	60.0	5	80	5
01-162-3-LP	PASSAGE	W5	1	127.0	5	80	5
1-162-1-TS	STAIRCASE	F3	1	76.2	25	300	5
02-162-1-TS	STAIRCASE	C3	1	76.2	10	100	5
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			3				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-162-2-LP PASSAGE

USE: LP Passageways

AREA: 196 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,968 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 393 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 250 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-162-2-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W6	1	80.0	10	100	5
01-162-0-TU	UPTAKE 2	W8	0	160.0	80	100	5
01-162-4-LW	WR WC & SHR	W3	0	77.0	25	60	25
01-162-6-L	CPO BERTHING	W2	0	40.0	25	40	30
01-162-6-L	CPO BERTHING	W2	1	160.0	25	40	30
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	40.0	10	100	5
01-178-2-W	ROLL STABILIZATION TANK	W6	0	140.0	10	100	5
1-162-2-LP	PASSAGE	F3	0	95.4	25	300	5
1-162-4-Q	SHIP STORE	F3	0	51.6	25	300	5
1-169-2-T	MACHINERY HOIST ROOM	F3	0	49.8	25	300	5
02-121-2-LP	PASSAGE	C3	0	40.6	10	100	5
02-162-2-A	STOREROOM	C3	0	96.0	10	100	5
02-162-6-L	OFFICER SR	C3	0	60.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-162-3-LP PASSAGE

USE: LP Passageways

AREA: 144 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,440 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 288 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 625 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-162-3-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-114-1-LP	PASSAGE	W6	1	40.0	10	100	5
01-162-0-TU	UPTAKE 2	W8	0	33.0	80	100	5
01-162-1-TS	STAIRCASE	W5	0	60.0	5	80	5
01-162-1-TS	STAIRCASE	W5	1	127.0	5	80	5
01-162-5-A	ARCTIC GEAR LOCKER--OFFIC	W2	0	117.0	25	40	30
01-162-5-A	ARCTIC GEAR LOCKER--OFFIC	W2	1	140.0	25	40	30
01-178-1-LP	PASSAGE	W2	1	40.0	25	40	30
01-178-3-W	ROLL STABILIZATION TANK	W6	0	140.0	10	100	5
1-162-1-TS	STAIRCASE	F3	0	19.8	25	300	5
1-162-3-LP	PASSAGE	F3	0	72.6	25	300	5
1-174-1-L	MEDICAL TREATMENT & EXAMI	F3	0	43.0	25	300	5
1-174-3-L	WARD NO.2	F3	0	8.6	25	300	5
02-115-1-LP	PASSAGE	C3	0	64.0	10	100	5
02-162-1-TS	STAIRCASE	C3	0	19.8	10	100	5
02-162-3-L	OFFICER SR	C3	0	21.5	10	100	5
02-171-1-LW	WR WC & SHR	C3	0	38.7	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-162-4-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 38 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 385 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 96 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-162-4-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-100-2-LP	PASSAGE	W6	0	20.0	10	100	5
01-154-2-LW	WR WC & SHR	W6	0	30.0	10	100	5
01-162-2-LP	PASSAGE	W3	0	77.0	25	60	25
01-162-6-L	CPO BERTHING	W3	1	50.0	25	60	25
01-162-6-L	CPO BERTHING	W3	0	77.0	25	60	25
1-162-2-LP	PASSAGE	F3	0	30.8	25	300	5
1-162-4-Q	SHIP STORE	F3	0	7.7	25	300	5
02-121-2-LP	PASSAGE	C3	0	15.4	10	100	5
02-162-4-LW	WR WC & SHR	C3	0	23.1	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-162-5-A ARCTIC GEAR LOCKER--OFFICER/CPO

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 163 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,638 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 120,000 BTUs/sq.ft.
Based on hanging wetsuits or parkas.

VENTILATION: 163 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	5	3	0	40
Tbar Failure	5	3	0	30
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-162-5-A ARCTIC GEAR LOCKER--OFFICER/CPO

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-146-3-L	OFFICER SR	W6	0	140.0	10	100	5
01-162-3-LP	PASSAGE	W2	0	117.0	25	40	30
01-162-3-LP	PASSAGE	W2	1	140.0	25	40	30
1-162-3-LP	PASSAGE	F3	0	23.4	25	300	5
1-162-5-LW	WARD BATH	F3	0	98.0	25	300	5
1-162-7-L	WARD NO.1	F3	0	21.4	25	300	5
1-174-1-L	MEDICAL TREATMENT & EXAMI	F3	0	19.0	25	300	5
1-174-3-L	WARD NO.2	F3	0	2.0	25	300	5
02-162-3-L	OFFICER SR	C3	0	139.5	10	100	5
02-171-1-LW	WR WC & SHR	C3	0	24.3	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-162-6-L CPO BERTHING

USE: L2 Berthing Space for 2

AREA: 148 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,487 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 32,800 BTUs/sq.ft.
From CPO Berthing Compartment Tests, MFRB 000134

VENTILATION: 297 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	15	3	0	30
Tbar Failure	10	3	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-162-6-L CPO BERTHING

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-142-2-L	CPO BERTHING	W6	0	88.0	10	100	5
01-154-2-LW	WR WC & SHR	W6	0	22.0	10	100	5
01-162-2-LP	PASSAGE	W2	0	40.0	25	40	30
01-162-2-LP	PASSAGE	W2	1	160.0	25	40	30
01-162-4-LW	WR WC & SHR	W3	1	50.0	25	60	25
01-162-4-LW	WR WC & SHR	W3	0	77.0	25	60	25
1-162-2-LP	PASSAGE	F3	0	16.0	25	300	5
1-162-4-Q	SHIP STORE	F3	0	111.3	25	300	5
1-162-6-A	SHIP STORE STOREROOM	F3	0	21.4	25	300	5
02-121-2-LP	PASSAGE	C3	0	8.0	10	100	5
02-162-4-LW	WR WC & SHR	C3	0	36.1	10	100	5
02-162-6-L	OFFICER SR	C3	0	104.6	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-178-1-LP PASSAGE

USE: LP Passageways

AREA: 224 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 2,240 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 448 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 250 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable carbon dioxide fire extinguisher
1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-178-1-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-162-3-LP	PASSAGE	W2	1	40.0	25	40	30
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	40.0	10	100	5
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	118.0	10	100	5
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	160.0	10	100	5
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	160.0	10	100	5
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	242.0	10	100	5
01-178-3-W	ROLL STABILIZATION TANK	W6	0	400.0	10	100	5
01-218-5-LP	PASSAGE	W2	1	40.0	25	40	30
1-162-3-LP	PASSAGE	F3	0	42.8	25	300	5
1-178-1-E	BOILER ROOM UPPER LEVEL	F3	0	181.2	25	300	5
02-178-0-E	EMERGENCY/HARBOR GENERATO	C3	0	64.0	10	100	5
02-178-1-LP	PASSAGE	C3	0	160.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-218-1-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 42 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 424 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 106 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-218-1-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	80.0	10	100	5
01-218-2-LW	WC & SHR	W3	0	53.0	25	60	25
01-218-3-A	GEAR LOCKER	W3	0	53.0	25	60	25
01-222-0-LW	WC & SHR	W3	0	45.0	25	60	25
01-222-1-L	SCIENTIST SR	W3	1	35.0	25	60	25
1-210-0-M	SMALL ARMS STOW & REPAIR	F3	0	23.8	25	300	5
1-210-1-Q	BARBER SHOP	F3	0	18.6	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	42.4	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-218-2-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 47 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 476 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 119 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-218-2-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	80.0	10	100	5
01-218-1-LW	WC & SHR	W3	0	53.0	25	60	25
01-218-4-A	GEAR LOCKER	W3	0	20.0	25	60	25
01-218-4-A	GEAR LOCKER	W3	0	26.0	25	60	25
01-218-4-A	GEAR LOCKER	W3	0	27.0	25	60	25
01-222-0-LW	WC & SHR	W3	0	45.0	25	60	25
01-222-2-L	SCIENTIST SR	W3	1	55.0	25	60	25
1-210-0-M	SMALL ARMS STOW & REPAIR	F3	0	42.4	25	300	5
1-218-2-A	C.G. LOCKER	F3	0	5.2	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	47.6	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-218-3-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 42 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 424 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.
Fuel load in psf = 15 x height of deck.

VENTILATION: 42 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	3	0	40
Tbar Failure	10	3	0	30
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-218-3-A GEAR LOCKER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	80.0	10	100	5
01-218-1-LW	WC & SHR	W3	0	53.0	25	60	25
01-218-5-LP	PASSAGE	W2	1	53.0	25	40	30
01-222-1-L	SCIENTIST SR	W2	0	80.0	25	40	30
1-210-1-Q	BARBER SHOP	F3	0	26.5	25	300	5
1-213-1-LW	WC & WR	F3	0	15.9	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	42.4	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-218-4-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 37 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 372 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.
Fuel load in psf = 15 x height of deck.

VENTILATION: 37 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	3	0	40
Tbar Failure	10	3	0	30
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-218-4-A GEAR LOCKER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-178-0-W	ROLL STAB TANK CROSS DUCK	W6	0	80.0	10	100	5
01-218-2-LW	WC & SHR	W3	0	20.0	25	60	25
01-218-2-LW	WC & SHR	W3	0	26.0	25	60	25
01-218-2-LW	WC & SHR	W3	0	27.0	25	60	25
01-218-6-LP	PASSAGE	W2	1	53.0	25	40	30
01-222-2-L	SCIENTIST SR	W2	0	60.0	25	40	30
1-210-2-Q	MAIL ROOM	F3	0	5.6	25	300	5
1-218-2-A	C.G. LOCKER	F3	0	31.6	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	37.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-218-5-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 439 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 4,399 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 879 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 1125 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-218-5-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-178-1-LP	PASSAGE	W2	1	40.0	25	40	30
01-178-3-W	ROLL STABILIZATION TANK	W6	0	20.0	10	100	5
01-218-3-A	GEAR LOCKER	W2	1	53.0	25	40	30
01-222-1-L	SCIENTIST SR	W2	1	160.0	25	40	30
01-239-3-L	SCIENTIST SR	W2	0	120.0	25	40	30
01-239-3-L	SCIENTIST SR	W2	1	160.0	25	40	30
01-239-6-LP	PASSAGE	W0	0	40.0	0	0	100
01-255-0-L	SCIENTIST SR	W2	1	25.0	25	40	30
01-255-1-LW	WC & SHR	W3	0	25.0	25	60	25
01-255-3-L	SCIENTIST SR	W2	1	35.0	25	40	30
01-255-3-L	SCIENTIST SR	W2	0	71.0	25	40	30
01-255-3-L	SCIENTIST SR	W2	0	80.0	25	40	30
01-255-5-LW	WC & SHR	W3	0	30.0	25	60	25
01-255-5-LW	WC & SHR	W3	0	89.0	25	60	25
01-271-1-L	SCIENTIST SR	W2	1	59.0	25	40	30
01-277-5-L	SCIENTIST SR	W2	1	95.0	25	40	30
1-162-3-LP	PASSAGE	F3	0	31.8	25	300	5
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	F3	0	96.0	25	300	5
1-239-0-Q	DRY LAB	F3	0	54.0	25	300	5
1-239-1-LP	PASSAGE	F3	0	38.4	25	300	5
1-245-1-Q	SCIENCE REEFER MACHY. ROO	F3	0	67.6	25	300	5
1-255-1-A	REEFER	F3	0	96.0	25	300	5
1-271-0-Q	WET LAB	F3	0	56.1	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	60.0	10	100	5
02-228-0-Q	HANGAR	C3	0	84.7	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-218-8-A SCIENTIST BAGGAGE ROOM

USE: AS Storerooms

AREA: 170 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,704 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,600,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 170 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	4	0	30
Tbar Failure	20	4	0	20
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-218-8-A SCIENTIST BAGGAGE ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-178-2-W	ROLL STABILIZATION TANK	W6	0	80.0	10	100	5
01-218-6-LP	PASSAGE	W2	1	213.0	25	40	30
01-239-8-A	FAN ROOM	W6	0	80.0	10	100	5
1-213-2-TS	STAIRCASE	F3	0	21.2	25	300	5
1-217-2-A	C.G. LOCKER	F3	0	21.2	25	300	5
1-223-4-A	LIFE JACKET LOCKER	F3	0	64.0	25	300	5
1-223-6-L	Q.M. SHELTER	F3	0	16.0	25	300	5
1-233-2-A	BOAT GEAR LOCKER	F3	0	48.0	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	20.0	10	100	5
02-228-0-Q	HANGAR	C3	0	45.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-222-0-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 27 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 270 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 67 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-222-0-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-1-LW	WC & SHR	W3	0	45.0	25	60	25
01-218-2-LW	WC & SHR	W3	0	45.0	25	60	25
01-222-1-L	SCIENTIST SR	W3	0	30.0	25	60	25
01-222-2-L	SCIENTIST SR	W3	0	30.0	25	60	25
01-225-0-L	SCIENTIST SR	W3	1	90.0	25	60	25
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	F3	0	27.0	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	27.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-222-1-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 184 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,841 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 19,848 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 368 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-222-1-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-1-LW	WC & SHR	W3	1	35.0	25	60	25
01-218-3-A	GEAR LOCKER	W2	0	80.0	25	40	30
01-218-5-LP	PASSAGE	W2	1	160.0	25	40	30
01-222-0-LW	WC & SHR	W3	0	30.0	25	60	25
01-225-0-L	SCIENTIST SR	W2	0	130.0	25	40	30
01-239-1-LW	WC & SHR	W3	0	45.0	25	60	25
01-239-3-L	SCIENTIST SR	W2	0	70.0	25	40	30
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	F3	0	184.1	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	54.1	10	100	5
02-228-0-Q	HANGAR	C3	0	130.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-222-2-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 131 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,311 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 19,848 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 262 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-222-2-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-2-LW	WC & SHR	W3	1	55.0	25	60	25
01-218-4-A	GEAR LOCKER	W2	0	60.0	25	40	30
01-218-6-LP	PASSAGE	W2	0	114.0	25	40	30
01-218-6-LP	PASSAGE	W2	1	115.0	25	40	30
01-222-0-LW	WC & SHR	W3	0	30.0	25	60	25
01-225-0-L	SCIENTIST SR	W2	0	84.0	25	40	30
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	F3	0	131.1	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	54.1	10	100	5
02-228-0-Q	HANGAR	C3	0	77.1	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-225-0-L SCIENTIST SR

USE: L1 Berthing Space for 1

AREA: 116 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,169 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 12,442 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 233 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-225-0-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-6-LP	PASSAGE	W2	1	46.0	25	40	30
01-222-0-LW	WC & SHR	W3	1	90.0	25	60	25
01-222-1-L	SCIENTIST SR	W2	0	130.0	25	40	30
01-222-2-L	SCIENTIST SR	W2	0	84.0	25	40	30
01-239-1-LW	WC & SHR	W3	0	45.0	25	60	25
01-239-2-LW	WC & SHR	W3	0	45.0	25	60	25
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	F3	0	116.9	25	300	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	C3	0	15.3	10	100	5
02-228-0-Q	HANGAR	C3	0	101.6	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-239-1-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 27 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 270 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 67 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-239-1-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-222-1-L	SCIENTIST SR	W3	0	45.0	25	60	25
01-225-0-L	SCIENTIST SR	W3	0	45.0	25	60	25
01-239-2-LW	WC & SHR	W3	0	30.0	25	60	25
01-239-3-L	SCIENTIST SF	W3	1	30.0	25	60	25
01-239-3-L	SCIENTIST SR	W3	0	90.0	25	60	25
1-239-0-Q	DRY LAB	F3	0	27.0	25	300	5
02-228-0-Q	HANGAR	C3	0	27.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-239-2-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 27 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 270 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 67 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-239-2-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-6-LP	PASSAGE	W3	0	45.0	25	60	25
01-225-0-L	SCIENTIST SR	W3	0	45.0	25	60	25
01-239-1-LW	WC & SHR	W3	0	30.0	25	60	25
01-239-4-L	SCIENTIST SR	W3	1	30.0	25	60	25
01-239-4-L	SCIENTIST SR	W3	0	90.0	25	60	25
1-239-0-Q	DRY LAB	F3	0	27.0	25	300	5
02-228-0-Q	HANGAR	C3	0	27.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-239-3-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 165 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,650 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 18,846 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 330 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-239-3-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-5-LP	PASSAGE	W2	0	120.0	25	40	30
01-218-5-LP	PASSAGE	W2	1	160.0	25	40	30
01-222-1-L	SCIENTIST SR	W2	0	70.0	25	40	30
01-239-1-LW	WC & SHR	W3	1	30.0	25	60	25
01-239-1-LW	WC & SHR	W3	0	90.0	25	60	25
01-239-4-L	SCIENTIST SR	W2	0	90.0	25	40	30
1-239-0-Q	DRY LAB	F3	0	151.0	25	300	5
1-245-1-Q	SCIENCE REEFER MACHY. ROO	F3	0	14.0	25	300	5
02-228-0-Q	HANGAR	C3	0	165.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-239-4-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 165 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,650 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 18,846 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 330 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-239-4-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-6-LP	PASSAGE	W2	0	70.0	25	40	30
01-239-2-LW	WC & SHR	W3	1	30.0	25	60	25
01-239-2-LW	WC & SHR	W3	0	90.0	25	60	25
01-239-3-L	SCIENTIST SR	W2	0	90.0	25	40	30
01-239-6-LP	PASSAGE	W2	0	120.0	25	40	30
01-239-6-LP	PASSAGE	W2	1	160.0	25	40	30
1-239-0-Q	DRY LAB	F3	0	165.0	25	300	5
02-228-0-Q	HANGAR	C3	0	165.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-239-8-A FAN ROOM

USE: QF Fan Rooms

AREA: 128 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,280 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 1,600,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 640 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	20
Tbar Failure	100	999	0	50
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-239-8-A FAN ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-8-A	SCIENCE BAGGAGE ROOM	W6	0	80.0	10	100	5
01-239-6-LP	PASSAGE	W6	1	160.0	10	100	5
01-255-10-A	STOREROOM	W6	0	40.0	10	100	5
01-255-8-A	XFMR FECT HELO	W6	0	40.0	10	100	5
1-239-2-A	PHOTO LAB	F3	0	128.0	25	300	5
02-228-0-Q	HANGAR	C3	0	64.0	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-0-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 137 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,375 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 23,279 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 275 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-0-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-5-LP	PASSAGE	W2	1	25.0	25	40	30
01-239-6-LP	PASSAGE	W2	0	50.0	25	40	30
01-255-1-LW	WC & SHR	W3	0	25.0	25	60	25
01-255-1-LW	WC & SHR	W3	1	90.0	25	60	25
01-255-2-L	SCIENTIST SR	W2	0	160.0	25	40	30
01-255-3-L	SCIENTIST SR	W2	0	70.0	25	40	30
01-271-1-L	SCIENTIST SR	W6	0	50.0	10	100	5
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W6	0	50.0	10	100	5
1-255-0-Q	ELECTRONICS LAB	F3	0	112.0	25	300	5
1-255-1-A	REEFER	F3	0	25.5	25	300	5
02-228-0-Q	HANGAR	C3	0	137.5	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-1-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 22 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 225 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 56 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-1-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-5-LP	PASSAGE	W3	0	25.0	25	60	25
01-255-0-L	SCIENTIST SR	W3	0	25.0	25	60	25
01-255-0-L	SCIENTIST SR	W3	1	90.0	25	60	25
01-255-3-L	SCIENTIST SR	W3	0	90.0	25	60	25
1-255-1-A	REEFER	F3	0	22.5	25	300	5
02-228-0-Q	HANGAR	C3	0	22.5	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
LAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-10-A STOREROOM

USE: AS Storerooms

AREA: 64 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 640 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,600,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 64 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	4	0	30
Tbar Failure	20	4	0	20
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-10-A STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-239-8-A	FAN ROOM	W6	0	40.0	10	100	5
01-255-8-A	XFMR FECT HELO	W2	0	64.0	25	40	30
01-261-2-TS	STAIRCASE	W5	1	96.0	5	80	5
01-271-4-L	SCIENTIST SR	W6	0	40.0	10	100	5
1-255-2-TS	STAIRCASE	F3	0	64.0	25	300	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-2-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 150 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,508 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 21,220 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 301 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-2-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-239-6-LP	PASSAGE	W2	1	80.0	25	40	30
01-255-0-L	SCIENTIST SR	W2	0	160.0	25	40	30
01-255-4-LW	WC & SHR	W3	0	30.0	25	60	25
01-255-4-LW	WC & SHR	W3	1	84.0	25	60	25
01-255-6-LP	PASSAGE	W2	0	76.0	25	40	30
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W6	0	110.0	10	100	5
1-255-0-Q	ELECTRONICS LAB	F3	0	150.8	25	300	5
02-228-0-Q	HANGAR	C3	0	150.8	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-3-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 149 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,493 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 21,433 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 298 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-3-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-5-LP	PASSAGE	W2	1	35.0	25	40	30
01-218-5-LP	PASSAGE	W2	0	71.0	25	40	30
01-218-5-LP	PASSAGE	W2	0	80.0	25	40	30
01-255-0-L	SCIENTIST SR	W2	0	70.0	25	40	30
01-255-1-LW	WC & SHR	W3	0	90.0	25	60	25
01-255-5-LW	WC & SHR	W3	0	30.0	25	60	25
01-255-5-LW	WC & SHR	W3	1	89.0	25	60	25
01-271-1-L	SCIENTIST SR	W6	0	75.0	10	100	5
1-255-1-A	REEFER	F3	0	149.3	25	300	5
02-228-0-Q	HANGAR	C3	0	149.3	10	100	5
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			2				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-4-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 25 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 252 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 63 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-4-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-239-6-LP	PASSAGE	W3	0	30.0	25	60	25
01-255-2-L	SCIENTIST SR	W3	0	30.0	25	60	25
01-255-2-L	SCIENTIST SR	W3	1	84.0	25	60	25
01-255-6-LP	PASSAGE	W3	0	84.0	25	60	25
1-255-0-Q	ELECTRONICS LAB	F3	0	25.2	25	300	5
02-228-0-Q	HANGAR	C3	0	25.2	10	100	5
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Feb 02 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-5-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 26 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 267 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 66 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-5-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-5-LP	PASSAGE	W3	0	30.0	25	60	25
01-218-5-LP	PASSAGE	W3	0	89.0	25	60	25
01-255-3-L	SCIENTIST SR	W3	0	30.0	25	60	25
01-255-3-L	SCIENTIST SR	W3	1	89.0	25	60	25
1-255-1-A	REEFER	F3	0	26.7	25	300	5
02-228-0-Q	HANGAR	C3	0	26.7	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-255-8-A XFMR RECT HELO

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 25 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 256 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 8,000 BTUs/sq.ft.

VENTILATION: 25 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	3	0	40
Tbar Failure	20	3	0	30
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-255-8-A XFMR RECT HELO

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-239-8-A	FAN ROOM	W6	0	40.0	10	100	5
01-255-10-A	STOREROOM	W2	0	64.0	25	40	30
01-255-6-LP	PASSAGE	W2	1	64.0	25	40	30
01-261-2-TS	STAIRCASE	W5	0	40.0	5	80	5
1-255-2-TS	STAIRCASE	F3	0	25.6	25	300	5
02-228-0-Q	HANGAR	C3	0	25.6	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-261-2-TS STAIRCASE

USE: TS Staircases

AREA: 38 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 384 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 76 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 × FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-261-2-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-10-A	STOREROOM	W5	1	96.0	5	80	5
01-255-6-LP	PASSAGE	W5	1	96.0	5	80	5
01-255-8-A	XFMR FECT HELO	W5	0	40.0	5	80	5
01-271-4-L	SCIENTIST SR	W6	0	40.0	10	100	5
1-255-2-TS	STAIRCASE	F3	1	38.4	25	300	5
02-228-0-Q	HANGAR	C3	0	38.4	10	100	5
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Feb 02 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-271-1-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 229 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 2,297 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 13,931 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 459 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-271-1-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-5-LP	PASSAGE	W2	1	59.0	25	40	30
01-255-0-L	SCIENTIST SR	W6	0	50.0	10	100	5
01-255-3-L	SCIENTIST SR	W6	0	75.0	10	100	5
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W2	0	240.0	25	40	30
01-277-1-LW	WC & SHR	W3	1	25.0	25	60	25
01-277-1-LW	WC & SHR	W3	0	25.0	25	60	25
01-277-1-LW	WC & SHR	W3	0	100.0	25	60	25
01-277-3-LW	WC & SHR	W3	0	25.0	25	60	25
01-277-5-L	SCIENTIST SR	W2	0	81.0	25	40	30
01-295-1-Q	VESTIBULE	W2	0	100.0	25	40	30
1-271-0-Q	WET LAB	F3	0	229.7	25	300	5
02-228-0-Q	HANGAR	C3	0	100.0	10	100	5
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			2				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-271-2-Q SCIENTIST LIBRARY/CONFERENCE ROOM

USE: QO Offices

AREA: 650 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 6 504 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

VENTILATION: 929 cu ft/min EXCHANGE TIME: 7.0 min.
VENT AREA: 225 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	60
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 35% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-271-2-Q SCIENTIST LIBRARY/CONFERENCE ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-0-L	SCIENTIST SR	W6	0	50.0	10	100	5
01-255-2-L	SCIENTIST SR	W6	0	110.0	10	100	5
01-255-6-LP	PASSAGE	W2	1	204.0	25	40	30
01-271-1-L	SCIENTIST SR	W2	0	240.0	25	40	30
01-292-2-LP	PASSAGE	W2	1	210.0	25	40	30
01-295-1-Q	VESTIBULE	W2	0	159.0	25	40	30
01-311-2-Q	HOIST EQPT ROOM	W2	0	15.0	25	40	30
01-311-2-Q	HOIST EQPT ROOM	W6	1	80.0	10	100	5
01-312-2-Q	SCIENTIST COMM CENTER	W2	1	80.0	25	40	30
1-271-0-Q	WET LAB	F3	0	256.0	25	300	5
1-287-2-Q	WET LAB NO.2	F3	0	394.4	25	300	5
02-228-0-Q	HANGAR	C3	0	150.4	10	100	5
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			4				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-271-4-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 152 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,526 cu ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 20,678 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 305 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-271-4-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-10-A	STOREROOM	W6	0	40.0	10	100	5
01-255-6-LP	PASSAGE	W2	1	96.0	25	40	30
01-255-6-LP	PASSAGE	W2	0	159.0	25	40	30
01-261-2-TS	STAIRCASE	W6	0	40.0	10	100	5
01-271-6-LW	WR WC & SHR	W3	1	79.0	25	60	25
01-278-2-LW	WR WC & SHR	W3	1	80.0	25	60	25
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	118.6	25	300	5
1-278-2-TS	STAIRCASE	F3	0	34.0	25	300	5
02-228-0-Q	HANGAR	C3	0	37.6	10	100	5
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			3				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-271-6-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 38 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 387 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 96 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-271-6-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-271-4-L	SCIENTIST SR	W3	1	79.0	25	60	25
01-271-8-L	SCIENTIST SR	W3	1	79.0	25	60	25
01-278-2-LW	WR WC & SHR	W6	0	49.0	10	100	5
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	38.7	25	300	5
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			2				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-271-8-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 204 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 2,041 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 18,383 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 408 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-271-8-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-6-LP	PASSAGE	W2	1	45.0	25	40	30
01-271-6-LW	WR WC & SHR	W3	1	79.0	25	60	25
01-278-2-LW	WR WC & SHR	W3	0	80.0	25	60	25
01-292-8-L	SCIENTIST SR	W6	0	95.0	10	100	5
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	54.3	25	300	5
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			2				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-277-1-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 25 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 250 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 62 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-277-1-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-271-1-L	SCIENTIST SR	W3	1	25.0	25	60	25
01-271-1-L	SCIENTIST SR	W3	0	25.0	25	60	25
01-271-1-L	SCIENTIST SR	W3	0	100.0	25	60	25
01-277-3-LW	WC & SHR	W3	0	100.0	25	60	25
1-271-0-Q	WET LAB	F3	0	25.0	25	300	5
02-228-0-Q	HANGAR	C3	0	8.8	10	100	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-277-3-LW WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 25 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 250 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 62 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-277-3-LW WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-271-1-L	SCIENTIST SR	W3	0	25.0	25	60	25
01-277-1-LW	WC & SHR	W3	0	100.0	25	60	25
01-277-5-L	SCIENTIST SR	W3	0	25.0	25	60	25
01-277-5-L	SCIENTIST SR	W3	1	100.0	25	60	25
1-271-0-Q	WET LAB	F3	0	25.0	25	300	5
02-228-0-Q	HANGAR	C3	0	8.7	10	100	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-277-5-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 192 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,922 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 16,645 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 384 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-277-5-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-218-5-LP	PASSAGE	W2	1	95.0	25	40	30
01-271-1-L	SCIENTIST SR	W2	0	81.0	25	40	30
01-277-3-LW	WC & SHR	W3	0	25.0	25	60	25
01-277-3-LW	WC & SHR	W3	1	100.0	25	60	25
01-295-1-Q	VESTIBULE	W2	0	120.0	25	40	30
1-271-0-Q	WET LAB	F3	0	192.2	25	300	5
02-228-0-Q	HANGAR	C3	0	12.3	10	100	5
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			2				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-278-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 39 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 392 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 98 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-278-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-6-LP	PASSAGE	W3	0	49.0	25	60	25
01-271-4-L	SCIENTIST SR	W3	1	80.0	25	60	25
01-271-6-LW	WR WC & SHR	W6	0	49.0	10	100	5
01-271-8-L	SCIENTIST SR	W3	0	80.0	25	60	25
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	39.2	25	300	5
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Feb 02 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-282-2-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 175 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,756 cu.ft

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 351 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 625 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 × FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-292-2-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-6-LP	PASSAGE	W0	0	40.0	0	0	100
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W2	1	210.0	25	40	30
01-292-4-L	SCIENTIST SR	W2	0	96.0	25	40	30
01-292-4-L	SCIENTIST SR	W2	0	155.0	25	40	30
01-292-8-L	SCIENTIST SR	W2	1	45.0	25	40	30
01-298-2-LW	WR WC & SHR	W3	0	49.0	25	60	25
01-311-4-LW	WR WC & SHR	W6	0	50.0	10	100	5
01-311-4-LW	WR WC & SHR	W3	0	76.0	25	60	25
01-311-6-L	SCIENTIST SR	W6	1	95.0	10	100	5
01-312-2-Q	SCIENTIST COMM CENTER	W2	0	66.0	25	40	30
01-319-0-C	SCIENCE & WINCH CONTROL S	W2	1	40.0	25	40	30
1-223-2-LP	PASSAGE	F3	0	110.4	25	300	5
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	3.7	25	300	5
1-302-2-LW	WTR WC & SHR	F3	0	3.5	25	300	5
1-307-2-A	ARCTIC GEAR LOCKER--SCIEN	F3	0	58.0	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-292-4-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 148 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,488 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 16,869 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 297 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-292-4-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-6-LP	PASSAGE	W2	1	96.0	25	40	30
01-292-2-LP	PASSAGE	W2	0	96.0	25	40	30
01-292-2-LP	PASSAGE	W2	0	155.0	25	40	30
01-292-6-LW	WR WC & SHR	W3	0	70.0	25	60	25
01-298-2-LW	WR WC & SHR	W3	1	85.0	25	60	25
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	117.3	25	300	5
1-302-2-LW	WTR WC & SHR	F3	0	31.5	25	300	5
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			2				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-292-6-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 34 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 343 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 85 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-292-6-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-255-6-LP	PASSAGE	W3	0	49.0	25	60	25
01-292-4-L	SCIENTIST SR	W3	0	70.0	25	60	25
01-292-8-L	SCIENTIST SR	W3	1	70.0	25	60	25
01-298-2-LW	WR WC & SHR	W3	0	49.0	25	60	25
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	34.3	25	300	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-292-8-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 180 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,801 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 18,824 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 360 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-292-8-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-271-8-L	SCIENTIST SR	W6	0	95.0	10	100	5
01-292-2-LP	PASSAGE	W2	1	45.0	25	40	30
01-292-6-LW	WR WC & SHR	W3	1	70.0	25	60	25
01-298-2-LW	WR WC & SHR	W3	0	85.0	25	60	25
01-311-6-L	SCIENTIST SR	W6	0	85.0	10	100	5
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	18.6	25	300	5
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			2				

Feb 03, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-295-1-Q VESTIBULE (01 LEVEL)
Zero strength barrier below.

USE: QS Scientific Spaces

AREA: 528 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 5,280 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 1,056 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 200 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	90	999	0	30
Tbar Failure	90	999	0	40
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 20% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-295-1-Q VESTIBULE (01 LEVEL)

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-271-1-L	SCIENTIST SR	W2	0	100.0	25	40	30
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W2	0	159.0	25	40	30
01-277-5-L	SCIENTIST SR	W2	0	120.0	25	40	30
01-311-2-Q	HOIST EQPT ROOM	W2	0	81.0	25	40	30
01-319-0-C	SCIENCE & WINCH CONTROL S	W2	0	220.0	25	40	30
1-295-1-Q	VESTIBULE (MAIN DECK LEVE	F0	0	528.0	0	0	100
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-298-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 41 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 416 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 104 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-298-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-292-2-LP	PASSAGE	W3	0	49.0	25	60	25
01-292-4-L	SCIENTIST SR	W3	1	85.0	25	60	25
01-292-6-LW	WR WC & SHR	W3	0	49.0	25	60	25
01-292-8-L	SCIENTIST SR	W3	0	85.0	25	60	25
1-271-2-Q	RECOMPRESSION AREA & DIVE	F3	0	41.6	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-311-2-Q HOIST EQPT ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 64 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 648 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 324 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	0	3	0	20
Tbar Failure	0	3	0	40
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 25% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-311-2-Q HOIST EQPT ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W2	0	15.0	25	40	30
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W6	1	80.0	10	100	5
01-295-1-Q	VESTIBULE	W2	0	81.0	25	40	30
01-312-2-Q	SCIENTIST COMM CENTER	W2	0	66.0	25	40	30
01-319-0-C	SCIENCE & WINCH CONTROL S	W2	0	80.0	25	40	30
1-287-2-Q	WET LAB NO.2	F3	0	4.0	25	300	5
1-311-2-T	ELEVATOR	F3	0	60.8	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-311-4-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 38 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 380 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 95 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-311-4-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-292-2-LP	PASSAGE	W6	0	50.0	10	100	5
01-292-2-LP	PASSAGE	W3	0	76.0	25	60	25
01-311-6-L	SCIENTIST SR	W3	1	76.0	25	60	25
01-319-0-C	SCIENCE & WINCH CONTROL S	W3	0	50.0	25	60	25
1-307-2-A	ARCTIC GEAR LOCKER--SCIEN	F3	0	38.0	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-311-6-L SCIENTIST SR

USE: L2 Berthing Space for 2

AREA: 135 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,353 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 21,419 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 270 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-311-6-L SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-292-2-LP	PASSAGE	W6	1	95.0	10	100	5
01-292-8-L	SCIENTIST SR	W6	0	85.0	10	100	5
01-311-4-LW	WR WC & SHR	W3	1	76.0	25	60	25
01-319-0-C	SCIENCE & WINCH CONTROL S	W2	0	90.0	25	40	30
1-307-2-A	ARCTIC GEAR LOCKER--SCIEN	F3	0	73.0	25	300	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-312-2-Q SCIENTIST COMM CENTER

USE: QS Scientific Spaces

AREA: 52 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 528 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 28,000 BTUs/sq.ft.

VENTILATION: 58 cu ft/min EXCHANGE TIME: 9.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	15	4	0	30
Tbar Failure	0	4	0	40
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 35% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-312-2-Q SCIENTIST COMM CENTER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	W2	1	80.0	25	40	30
01-292-2-LP	PASSAGE	W2	0	66.0	25	40	30
01-311-2-Q	HOIST EQPT ROOM	W2	0	66.0	25	40	30
01-319-0-C	SCIENCE & WINCH CONTROL S	W2	0	80.0	25	40	30
1-287-2-Q	WET LAB NO.2	F3	0	52.8	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 01-319-0-C SCIENCE & WINCH CONTROL STATION

USE: C Ship and fire control operating areas normally occupied.

AREA: 716 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 7,164 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 8,000 BTUs/sq.ft.

VENTILATION: 1,791 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	80	8	0	70
Tbar Failure	60	8	0	60
Dbar Failure	20	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher
1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 01-319-0-C SCIENCE & WINCH CONTROL STATION

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
01-292-2-LP	PASSAGE	W2	1	40.0	25	40	30
01-295-1-Q	VESTIBULE	W2	0	220.0	25	40	30
01-311-2-Q	HOIST EQPT ROOM	W2	0	80.0	25	40	30
01-311-4-LW	WR WC & SHR	W3	0	50.0	25	60	25
01-311-6-L	SCIENTIST SR	W2	0	90.0	25	40	30
01-312-2-Q	SCIENTIST COMM CENTER	W2	0	80.0	25	40	30
1-307-2-A	ARCTIC GEAR LOCKER--SCIEN	F3	0	46.6	25	300	5
1-319-0-LP	PASSAGE	F3	0	347.6	25	300	5
1-326-0-Q	VENT TRUNK	F3	0	144.8	25	300	5
1-344-0-K	HAZARDOUS METALS ROOM	F3	0	48.0	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-100-1-LL CO LOUNGE

USE: LL Lounge areas

AREA: 456 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 4,111 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0006

FUEL LOAD: 24,800 BTUs/sq.ft.
From Lounge Burnout Rpt. 000278

VENTILATION: 1,027 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 400 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 10% of time in port and 40% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-100-1-LL CO LOUNGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-2-L	CO CABIN	W2	1	156.6	25	40	30
02-100-3-TS	STAIRCASE	W6	0	18.0	10	100	5
02-100-3-TS	STAIRCASE	W5	1	107.1	5	80	5
02-115-1-LP	PASSAGE	W2	1	133.2	25	40	30
02-120-2-L	OFFICER SR	W2	0	83.7	25	40	30
02-129-1-Q	PANTRY	W3	1	162.0	25	60	25
01-100-0-LL	WARDROOM & LOUNGE	F3	0	397.4	25	300	5
01-126-1-Q	OFFICER PANTRY	F3	0	59.4	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	417.2	10	100	5
03-129-1-TS	STAIRCASE	C3	0	1.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-100-2-L CO CABIN

USE: L Living quarters/medical/dental areas

AREA: 382 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,445 cu.ft

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 20,000 BTUs/sq.ft.

VENTILATION: 382 cu ft/min EXCHANGE TIME: 9.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 45% of time in port and 35% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-100-2-L CO CABIN

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-1-LL	CO LOUNGE	W2	1	156.6	25	40	30
02-100-4-L	CO SR	W2	1	93.6	25	40	30
02-113-2-LW	WR WC & SHR	W3	0	63.0	25	60	25
02-120-2-L	OFFICER SR	W6	0	162.0	10	100	5
02-121-2-LP	PASSAGE	W6	1	36.0	10	100	5
01-100-0-LL	WARDROOM & LOUNGE	F3	0	313.2	25	300	5
01-100-2-LP	PASSAGE	F3	0	69.6	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	272.0	10	100	5
03-111-2-LP	PASSAGE	C3	0	34.0	10	100	5
03-117-2-LW	WR & WC	C3	0	24.0	10	100	5
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			3				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-100-3-TS STAIRCASE

USE: TS Staircases

AREA: 71 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 642 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 128 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-100-3-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-1-LL	CO LOUNGE	W6	0	18.0	10	100	5
02-100-1-LL	CO LOUNGE	W5	1	107.1	5	80	5
02-100-5-L	CHIEF SCIENTIST SR	W5	0	107.1	5	80	5
02-115-1-LP	PASSAGE	W6	1	36.0	10	100	5
01-100-1-TS	STAIRCASE	F3	1	71.4	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	57.0	10	100	5
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			3				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-100-4-L CO SR

USE: L1 Berthing Space for 1

AREA: 375 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,379 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 4,244 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 375 cu ft/min EXCHANGE TIME: 9.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-100-4-L CO SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-2-L	CO CABIN	W2	1	93.6	25	40	30
02-113-2-LW	WR WC & SHR	W3	0	63.0	25	60	25
02-113-2-LW	WR WC & SHR	W6	1	81.0	10	100	5
02-120-6-L	VISITOR SR	W2	0	145.8	25	40	30
01-100-4-L	CPO BERTHING	F3	0	139.2	25	300	5
01-106-2-LW	WR WC & SHR	F3	0	48.0	25	300	5
01-113-2-L	CPO BERTHING	F3	0	63.0	25	300	5
03-106-2-A	ELECTRONIC SHOP	C3	0	312.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-100-5-L CHIEF SCIENTIST SR

USE: L1 Berthing Space for 1

AREA: 424 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,820 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 3,342 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 424 cu ft/min EXCHANGE TIME: 9.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-100-5-L CHIEF SCIENTIST SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-3-TS	STAIRCASE	W5	0	107.1	5	80	5
02-115-1-LP	PASSAGE	W2	1	63.0	25	40	30
02-116-1-LW	WR WC & SHR	W3	1	54.0	25	60	25
02-116-1-LW	WR WC & SHR	W3	0	54.0	25	60	25
02-116-1-LW	WR WC & SHR	W6	0	72.0	10	100	5
02-122-1-LW	WR WC & SHR	W3	0	36.0	25	60	25
02-122-3-L	OFFICER SR	W2	0	117.0	25	40	30
01-100-3-L	OFFICER SR	F3	0	210.7	25	300	5
01-111-1-LW	WR WC & SHR	F3	0	46.5	25	300	5
01-118-1-LW	WR WC & SHR	F3	0	14.0	25	300	5
01-118-3-L	OFFICER SR	F3	0	21.0	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	C3	0	343.3	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-113-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 63 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 567 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 141 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-113-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-2-L	CO CABIN	W3	0	63.0	25	60	25
02-100-4-L	CO SR	W3	0	63.0	25	60	25
02-100-4-L	CO SR	W6	1	81.0	10	100	5
02-120-4-LW	WR WC & SHR	W3	0	81.0	25	60	25
01-113-2-L	CPO BERTHING	F3	0	39.0	25	300	5
01-117-2-LW	WR WC & SHR	F3	0	24.0	25	300	5
03-106-2-A	ELECTRONIC SHOP	C3	0	63.0	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-115-1-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 339 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,052 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 610 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 1375 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-115-1-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-1-LL	CO LOUNGE	W2	1	133.2	25	40	30
02-100-3-TS	STAIRCASE	W6	1	36.0	10	100	5
02-100-5-L	CHIEF SCIENTIST SR	W2	1	63.0	25	40	30
02-121-2-LP	PASSAGE	W0	0	36.0	0	0	100
02-122-1-LW	WR WC & SHR	W3	0	58.5	25	60	25
02-122-3-L	OFFICER SR	W2	1	72.0	25	40	30
02-129-1-Q	PANTRY	W3	0	108.0	25	60	25
02-129-1-Q	PANTRY	W3	0	126.0	25	60	25
02-136-1-LW	WR WC & SHR	W3	0	36.0	25	60	25
02-136-1-LW	WR WC & SHR	W3	0	47.7	25	60	25
02-136-3-L	OFFICER SR	W2	1	51.3	25	40	30
02-138-1-T	DUMB WAITER	W5	0	36.0	5	80	5
02-145-0-TU	UPTAKE 1	W8	0	144.0	80	100	5
02-145-1-A	STOREROOM	W2	0	54.0	25	40	30
02-145-1-A	STOREROOM	W2	1	144.0	25	40	30
02-146-1-L	OFFICER SR	W2	1	63.0	25	40	30
02-154-1-LW	WR WC & SHR	W3	0	65.7	25	60	25
02-162-1-TS	STAIRCASE	W5	1	144.0	5	80	5
02-162-3-L	OFFICER SR	W2	1	81.0	25	40	30
02-171-1-LW	WR WC & SHR	W3	0	63.0	25	60	25
02-178-3-W	ROLL STABILIZATION TANK	W6	0	36.0	10	100	5
01-114-1-LP	PASSAGE	F3	0	275.2	25	300	5
01-162-3-LP	PASSAGE	F3	0	64.0	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	98.0	10	100	5
03-140-1-LP	PASSAGE	C3	0	241.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-116-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 48 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 432 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 108 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-116-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-5-L	CHIEF SCIENTIST SR	W3	1	54.0	25	60	25
02-100-5-L	CHIEF SCIENTIST SR	W3	0	54.0	25	60	25
02-100-5-L	CHIEF SCIENTIST SR	W6	0	72.0	10	100	5
02-122-1-LW	WR WC & SHR	W3	0	45.0	25	60	25
02-122-3-L	OFFICER SR	W3	0	27.0	25	60	25
01-111-1-LW	WR WC & SHR	F3	0	20.0	25	300	5
01-118-1-LW	WR WC & SHR	F3	0	14.0	25	300	5
01-118-3-L	OFFICER SR	F3	0	14.0	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	C3	0	48.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-120-2-L OFFICER SR

USE: L1 Berthing Space for 1

AREA: 288 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,600 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 6,129 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 325 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-120-2-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-1-LL	CO LOUNGE	W2	0	83.7	25	40	30
02-100-2-L	CO CABIN	W6	0	162.0	10	100	5
02-121-2-LP	PASSAGE	W2	1	76.5	25	40	30
02-121-2-LP	PASSAGE	W2	0	191.7	25	40	30
02-129-1-Q	PANTRY	W3	0	27.0	25	60	25
02-129-1-Q	PANTRY	W3	0	27.0	25	60	25
02-132-2-LW	WR WC & SHR	W3	0	58.5	25	60	25
02-132-2-LW	WR WC & SHR	W3	1	81.0	25	60	25
01-100-0-LL	WARDROOM & LOUNGE	F3	0	288.9	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	260.4	10	100	5
03-111-2-LP	PASSAGE	C3	0	19.6	10	100	5
03-117-2-LW	WR & WC	C3	0	9.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-120-4-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 63 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 567 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 141 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-120-4-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-113-2-LW	WR WC & SHR	W3	0	81.0	25	60	25
02-120-6-L	VISITOR SR	W3	0	63.0	25	60	25
02-120-6-L	VISITOR SR	W3	1	81.0	25	60	25
02-121-2-LP	PASSAGE	W3	0	63.0	25	60	25
01-113-2-L	CPO BERTHING	F3	0	15.0	25	300	5
01-117-2-LW	WR WC & SHR	F3	0	30.0	25	300	5
01-125-2-LW	WR WC & SHR	F3	0	12.0	25	300	5
01-125-4-L	CPO BERTHING	F3	0	6.0	25	300	5
03-106-2-A	ELECTRONIC SHOP	C3	0	63.0	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-120-6-L VISITOR SR

USE: L1 Berthing Space for 1

AREA: 340 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,061 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 4,923 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 382 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-120-6-L VISITOR SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-4-L	CO SR	W2	0	145.8	25	40	30
02-120-4-LW	WR WC & SHR	W3	0	63.0	25	60	25
02-120-4-LW	WR WC & SHR	W3	1	81.0	25	60	25
02-121-2-LP	PASSAGE	W2	1	81.0	25	40	30
02-136-2-LW	WR WC & SHR	W3	0	72.0	25	60	25
02-136-4-L	OFFICER SR	W2	0	154.8	25	40	30
01-113-2-L	CPO BERTHING	F3	0	45.0	25	300	5
01-125-2-LW	WR WC & SHR	F3	0	36.0	25	300	5
01-125-4-L	CPO BERTHING	F3	0	144.0	25	300	5
03-106-2-A	ELECTRONIC SHOP	C3	0	237.0	10	100	5
03-132-2-A	ELECTRONIC STOREROOM	C3	0	100.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-121-2-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 317 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,854 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 570 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 1375 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-121-2-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-2-L	CO CABIN	W6	1	36.0	10	100	5
02-115-1-LP	PASSAGE	W0	0	36.0	0	0	100
02-120-2-L	OFFICER SR	W2	1	76.5	25	40	30
02-120-2-L	OFFICER SR	W2	0	191.7	25	40	30
02-120-4-LW	WR WC & SHR	W3	0	63.0	25	60	25
02-120-6-L	VISITOR SR	W2	1	81.0	25	40	30
02-129-1-Q	PANTRY	W3	0	27.0	25	60	25
02-132-2-LW	WR WC & SHR	W3	0	58.5	25	60	25
02-136-2-LW	WR WC & SHR	W3	0	36.0	25	60	25
02-136-2-LW	WR WC & SHR	W3	0	47.7	25	60	25
02-136-4-L	OFFICER SR	W2	1	60.3	25	40	30
02-145-0-TU	UPTAKE 1	W8	0	144.0	80	100	5
02-145-2-TS	STAIRCASE	W5	0	54.0	5	80	5
02-145-2-TS	STAIRCASE	W5	2	108.0	5	80	5
02-148-2-L	OFFICER SR	W2	1	27.0	25	40	30
02-152-2-LW	WR WC & SHR	W3	0	92.7	25	60	25
02-158-2-A	GEAR LOCKER	W2	1	36.0	25	40	30
02-162-2-A	STOREROOM	W2	1	144.0	25	40	30
02-162-4-LW	WR WC & SHR	W3	0	78.3	25	60	25
02-162-6-L	OFFICER SR	W2	1	65.7	25	40	30
02-178-2-W	ROLL STABILIZATION TANK	W6	0	36.0	10	100	5
01-100-2-LP	PASSAGE	F3	0	253.2	25	300	5
01-162-2-LP	PASSAGE	F3	0	40.6	25	300	5
01-162-4-LW	WR WC & SHR	F3	0	15.4	25	300	5
01-162-6-L	CPO BERTHING	F3	0	8.0	25	300	5
03-111-2-LP	PASSAGE	C3	0	254.0	10	100	5
03-162-2-Q	FAN ROOM	C3	0	63.2	10	100	5
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			10				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-122-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 58 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 526 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 131 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-122-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-5-L	CHIEF SCIENTIST SR	W3	0	36.0	25	60	25
02-115-1-LP	PASSAGE	W3	0	58.5	25	60	25
02-116-1-LW	WR WC & SHR	W3	0	45.0	25	60	25
02-122-3-L	OFFICER SR	W3	0	58.5	25	60	25
02-122-3-L	OFFICER SR	W3	1	81.0	25	60	25
01-118-1-LW	WR WC & SHR	F3	0	12.0	25	300	5
01-118-3-L	OFFICER SR	F3	0	46.5	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	C3	0	58.5	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-122-3-L OFFICER SR

USE: L1 Berthing Space for 1

AREA: 304 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,736 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 5,392 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 342 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-122-3-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-5-L	CHIEF SCIENTIST SR	W2	0	117.0	25	40	30
02-115-1-LP	PASSAGE	W2	1	72.0	25	40	30
02-116-1-LW	WR WC & SHR	W3	0	27.0	25	60	25
02-122-1-LW	WR WC & SHR	W3	0	58.5	25	60	25
02-122-1-LW	WR WC & SHR	W3	1	81.0	25	60	25
02-136-1-LW	WR WC & SHR	W3	0	72.0	25	60	25
02-136-3-L	OFFICER SR	W2	0	153.0	25	40	30
01-118-3-L	OFFICER SR	F3	0	121.5	25	300	5
01-132-1-LW	WR WC & SHR	F3	0	27.0	25	300	5
01-132-3-L	OFFICER SR	F3	0	54.0	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	C3	0	291.4	10	100	5
			--				
			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-129-1-Q PANTRY

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 236 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,131 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0021

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 5,328 cu ft/min EXCHANGE TIME: 0.4 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	90	6	0	20
Tbar Failure	70	6	0	40
Dbar Failure	50	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 20% of time in port and 50% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-129-1-Q PANTRY

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-100-1-LL	CO LOUNGE	W3	1	162.0	25	60	25
02-115-1-LP	PASSAGE	W3	0	108.0	25	60	25
02-115-1-LP	PASSAGE	W3	0	126.0	25	60	25
02-120-2-L	OFFICER SR	W3	0	27.0	25	60	25
02-120-2-L	OFFICER SR	W3	0	27.0	25	60	25
02-121-2-LP	PASSAGE	W3	0	27.0	25	60	25
02-132-2-LW	WR WC & SHR	W3	0	81.0	25	60	25
02-138-1-T	DUMB WAITER	W5	0	34.2	5	80	5
02-138-1-T	DUMB WAITER	W5	1	34.2	5	80	5
02-138-1-T	DUMB WAITER	W5	0	36.0	5	80	5
01-100-0-LL	WARDROOM & LOUNGE	F3	0	36.0	25	300	5
01-126-1-Q	OFFICER PANTRY	F3	0	200.0	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	160.4	10	100	5
03-111-2-LP	PASSAGE	C3	0	6.9	10	100	5
03-129-1-TS	STAIRCASE	C3	0	37.3	10	100	5
03-140-1-LP	PASSAGE	C3	0	32.2	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-132-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 58 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 526 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 131 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle".50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-132-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-120-2-L	OFFICER SR	W3	0	58.5	25	60	25
02-120-2-L	OFFICER SR	W3	1	81.0	25	60	25
02-121-2-LP	PASSAGE	W3	0	58.5	25	60	25
02-129-1-Q	PANTRY	W3	0	81.0	25	60	25
01-100-0-LL	WARDROOM & LOUNGE	F3	0	58.5	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	43.5	10	100	5
03-111-2-LP	PASSAGE	C3	0	14.9	10	100	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-136-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 42 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 381 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 95 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-136-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W3	0	36.0	25	60	25
02-115-1-LP	PASSAGE	W3	0	47.7	25	60	25
02-122-3-L	OFFICER SR	W3	0	72.0	25	60	25
02-136-3-L	OFFICER SR	W3	1	36.0	25	60	25
02-136-3-L	OFFICER SR	W3	0	47.7	25	60	25
01-132-1-LW	WR WC & SHR	F3	0	6.0	25	300	5
01-132-3-L	OFFICER SR	F3	0	36.4	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	C3	0	30.4	10	100	5
03-140-1-LP	PASSAGE	C3	0	13.8	10	100	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-136-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 42 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 381 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 95 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 × FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-136-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-120-6-L	VISITOR SR	W3	0	72.0	25	60	25
02-121-2-LP	PASSAGE	W3	0	36.0	25	60	25
02-121-2-LP	PASSAGE	W3	0	47.7	25	60	25
02-136-4-L	OFFICER SR	W3	1	36.0	25	60	25
02-136-4-L	OFFICER SR	W3	0	47.7	25	60	25
01-100-2-LP	PASSAGE	F3	0	34.4	25	300	5
01-125-4-L	CPO BERTHING	F3	0	8.0	25	300	5
03-111-2-LP	PASSAGE	C3	0	5.2	10	100	5
03-132-2-A	ELECTRONIC STOREROOM	C3	0	37.2	10	100	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-136-3-L OFFICER SR

USE: L1 Berthing Space for 1

AREA: 209 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,888 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 7,833 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 236 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-136-3-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W2	1	51.3	25	40	30
02-122-3-L	OFFICER SR	W2	0	153.0	25	40	30
02-136-1-LW	WR WC & SHR	W3	1	36.0	25	60	25
02-136-1-LW	WR WC & SHR	W3	0	47.7	25	60	25
02-146-1-L	OFFICER SR	W2	0	189.0	25	40	30
01-114-1-LP	PASSAGE	F3	0	56.0	25	300	5
01-132-3-L	OFFICER SR	F3	0	53.0	25	300	5
01-146-1-LW	WR WC & SHR	F3	0	10.2	25	300	5
01-146-3-L	OFFICER SR	F3	0	13.6	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	C3	0	192.6	10	100	5
03-140-1-LP	PASSAGE	C3	0	11.4	10	100	5
			--				
			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-136-4-L OFFICER SR

USE: L1 Berthing Space for 1

AREA: 233 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,098 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 7,119 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 262 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-136-4-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-120-6-L	VISITOR SR	W2	0	154.8	25	40	30
02-121-2-LP	PASSAGE	W2	1	60.3	25	40	30
02-136-2-LW	WR WC & SHR	W3	1	36.0	25	60	25
02-136-2-LW	WR WC & SHR	W3	0	47.7	25	60	25
02-148-2-L	OFFICER SR	W2	0	190.8	25	40	30
01-100-2-LP	PASSAGE	F3	0	52.8	25	300	5
01-125-4-L	CPO BERTHING	F3	0	10.0	25	300	5
01-142-2-L	CPO BERTHING	F3	0	84.0	25	300	5
03-132-2-A	ELECTRONIC STOREROOM	C3	0	230.8	10	100	5
			--				
			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-138-1-T DUMB WAITER

USE: T Elevators, dumb waiters

AREA: 15 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 136 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 4,000 BTUs/sq.ft.
Accumulated dust and grease and cable insulation

VENTILATION: 68 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	30	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-138-1-T DUMB WAITER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W5	0	36.0	5	80	5
02-129-1-Q	PANTRY	W5	0	34.2	5	80	5
02-129-1-Q	PANTRY	W5	1	34.2	5	80	5
02-129-1-Q	PANTRY	W5	0	36.0	5	80	5
01-138-1-T	DUMB WAITER	F3	0	15.2	25	300	5
03-105-0-Q	RADIO ROOM	C3	0	4.5	10	100	5
03-129-1-TS	STAIRCASE	C3	0	1.5	10	100	5
03-140-1-LP	PASSAGE	C3	0	9.2	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-145-1-A STOREROOM

USE: AS Storerooms

AREA: 96 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 864 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,440,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 86 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	4	0	30
Tbar Failure	20	4	0	20
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-145-1-A STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W2	0	54.0	25	40	30
02-115-1-LP	PASSAGE	W2	1	144.0	25	40	30
02-145-0-TU	UPTAKE 1	W8	0	144.0	80	100	5
02-162-1-TS	STAIRCASE	W6	0	54.0	10	100	5
01-114-1-LP	PASSAGE	F3	0	46.2	25	300	5
01-153-1-A	STOREROOM	F3	0	49.8	25	300	5
03-147-1-A	STOREROOM	C3	0	70.2	10	100	5
03-157-1-A	STOREROOM	C3	0	25.8	10	100	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-145-2-TS STAIRCASE

USE: TS Staircases

AREA: 72 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 648 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 129 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-145-2-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area-sq.ft.	Tbar	Dbar	%heat rel
02-121-2-LP	PASSAGE	W5	0	54.0	5	80	5
02-121-2-LP	PASSAGE	W5	2	108.0	5	80	5
02-145-0-TU	UPTAKE 1	W8	0	108.0	80	100	5
02-158-2-A	GEAR LOCKER	W5	0	54.0	5	80	5
01-100-2-LP	PASSAGE	F3	0	1.8	25	300	5
01-145-2-TS	STAIRCASE	F3	1	70.2	25	300	5
03-145-2-TS	STAIRCASE	C3	1	70.2	10	100	5
03-157-2-A	GEAR LOCKER	C3	0	1.8	10	100	5
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			4				

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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-146-1-L OFFICER SR

USE: L1 Berthing Space for 1

AREA: 249 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,242 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 6,514 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 280 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-146-1-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W2	1	63.0	25	40	30
02-136-3-L	OFFICER SR	W2	0	189.0	25	40	30
02-154-1-LW	WR WC & SHR	W3	1	63.0	25	60	25
02-154-1-LW	WR WC & SHR	W3	0	65.7	25	60	25
02-162-3-L	OFFICER SR	W6	0	126.0	10	100	5
01-146-1-LW	WR WC & SHR	F3	0	36.0	25	300	5
01-146-3-L	OFFICER SR	F3	0	113.1	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	C3	0	202.6	10	100	5
03-140-1-LP	PASSAGE	C3	0	14.0	10	100	5
03-154-1-Q	HAM SHACK	C3	0	29.9	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-148-2-L OFFICER SR

USE: L2 Berthing Space for 2

AREA: 209 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,889 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 15,176 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 236 cu ft/min EXCHANGE TIME: 8.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
ar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-148-2-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-121-2-LP	PASSAGE	W2	1	27.0	25	40	30
02-136-4-L	OFFICER SR	W2	0	190.8	25	40	30
02-152-2-LW	WR WC & SHR	W3	0	63.0	25	60	25
02-152-2-LW	WR WC & SHR	W3	1	92.7	25	60	25
02-162-6-L	OFFICER SR	W6	0	127.8	10	100	5
01-142-2-L	CPO BERTHING	F3	0	114.1	25	300	5
03-132-2-A	ELECTRONIC STOREROOM	C3	0	207.2	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-152-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 72 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 648 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 162 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-154-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W3	0	65.7	25	60	25
02-146-1-L	OFFICER SR	W3	1	63.0	25	60	25
02-146-1-L	OFFICER SR	W3	0	65.7	25	60	25
02-162-3-L	OFFICER SR	W6	0	63.0	10	100	5
01-146-3-L	OFFICER SR	F3	0	51.1	25	300	5
03-140-1-LP	PASSAGE	C3	0	14.6	10	100	5
03-154-1-Q	HAM SHACK	C3	0	36.5	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-158-2-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 24 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 216 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.
Fuel load in psf = 15 x height of deck.

VENTILATION: 21 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	3	0	40
Tbar Failure	10	3	0	30
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-158-2-A GEAR LOCKER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-121-2-LP	PASSAGE	W2	1	36.0	25	40	30
02-145-0-TU	UPTAKE 1	W8	0	36.0	80	100	5
02-145-2-TS	STAIRCASE	W5	0	54.0	5	80	5
02-162-2-A	STOREROOM	W6	0	54.0	10	100	5
01-100-2-LP	PASSAGE	F3	0	24.0	25	300	5
03-157-2-A	GEAR LOCKER	C3	0	24.0	10	100	5
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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-158-2-A GEAR LOCKER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-121-2-LP	PASSAGE	W2	1	36.0	25	40	30
02-145-0-TU	UPTAKE 1	W8	0	36.0	80	100	5
02-145-2-TS	STAIRCASE	W5	0	54.0	5	80	5
02-162-2-A	STOREROOM	W6	0	54.0	10	100	5
01-100-2-LP	PASSAGE	F3	0	24.0	25	300	5
03-157-2-A	GEAR LOCKER	C3	0	24.0	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-162-1-TS STAIRCASE

USE: TS Staircases

AREA: 96 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 864 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 172 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-162-1-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W5	1	144.0	5	80	5
02-145-1-A	STOREROOM	W6	0	54.0	10	100	5
02-162-0-TU	UPTAKE 2	W8	0	144.0	80	100	5
02-178-1-LP	PASSAGE	W5	1	36.0	5	80	5
02-178-3-W	ROLL STABILIZATION TANK	W6	0	18.0	10	100	5
01-162-1-TS	STAIRCASE	F3	1	76.2	25	300	5
01-162-3-LP	PASSAGE	F3	0	19.8	25	300	5
03-140-1-LP	PASSAGE	C3	0	18.5	10	100	5
03-157-1-A	STOREROOM	C3	0	1.2	10	100	5
03-162-1-A	GEAR LOCKER	C3	0	21.0	10	100	5
03-165-1-TS	STAIRCASE	C3	1	55.3	10	100	5
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			4				

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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-162-2-A STOREROOM

USE: AS Storerooms

AREA: 96 sq.ft. DECK HEIGHT: 0 ft. VOLUME: 864 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,440,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 86 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	4	0	30
Tbar Failure	20	4	0	20
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-162-2-A STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-121-2-LP	PASSAGE	W2	1	144.0	25	40	30
02-158-2-A	GEAR LOCKER	W6	0	54.0	10	100	5
02-162-0-TU	UPTAKE 2	W8	0	144.0	80	100	5
02-178-2-W	ROLL STABILIZATION TANK	W6	0	54.0	10	100	5
01-162-2-LP	PASSAGE	F3	0	96.0	25	300	5
03-157-2-A	GEAR LOCKER	C3	0	1.2	10	100	5
03-162-2-Q	FAN ROOM	C3	0	94.8	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-162-3-L OFFICER SR

USE: L2 Berthing Space for 2

AREA: 273 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,457 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 10,491 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 491 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-162-3-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area-sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W2	1	81.0	25	40	30
02-146-1-L	OFFICER SR	W6	0	126.0	10	100	5
02-154-1-LW	WR WC & SHR	W6	0	63.0	10	100	5
02-171-1-LW	WR WC & SHR	W3	0	63.0	25	60	25
02-171-1-LW	WR WC & SHR	W3	1	81.0	25	60	25
01-162-3-LP	PASSAGE	F3	0	21.5	25	300	5
01-162-5-A	ARCTIC GEAR LOCKER--OFFIC	F3	0	139.5	25	300	5
03-140-1-LP	PASSAGE	C3	0	18.0	10	100	5
03-162-3-Q	FAN ROOM	C3	0	255.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-162-4-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 59 sq.ft. DECK HEIGHT: 9.0 ft VOLUME: 532 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 133 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-162-4-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-121-2-LP	PASSAGE	W3	0	78.3	25	60	25
02-152-2-LW	WR WC & SHR	W6	0	61.2	10	100	5
02-162-6-L	OFFICER SR	W3	1	61.2	25	60	25
02-162-6-L	OFFICER SR	W3	0	78.3	25	60	25
01-162-4-LW	WR WC & SHR	F3	0	23.1	25	300	5
01-162-6-L	CPO BERTHING	F3	0	36.1	25	300	5
03-132-2-A	ELECTRONIC STOREROOM	C3	0	1.4	10	100	5
03-162-2-Q	FAN ROOM	C3	0	57.8	10	100	5
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			1				

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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-162-6-L OFFICER SR

USE: L2 Berthing Space for 2

AREA: 280 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,520 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 8,629 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 504 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-162-6-L OFFICER SR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-121-2-LP	PASSAGE	W2	1	65.7	25	40	30
02-148-2-L	OFFICER SR	W6	0	127.8	10	100	5
02-162-4-LW	WR WC & SHR	W3	1	61.2	25	60	25
02-162-4-LW	WR WC & SHR	W3	0	78.3	25	60	25
02-178-2-W	ROLL STABILIZATION TANK	W6	0	72.0	10	100	5
01-162-2-LP	PASSAGE	F3	0	60.2	25	300	5
01-162-6-L	CPO BERTHING	F3	0	104.6	25	300	5
03-132-2-A	ELECTRONIC STOREROOM	C3	0	2.8	10	100	5
03-162-2-Q	FAN ROOM	C3	0	274.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-171-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 63 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 567 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 141 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
  Manual:
    Occupied 5% of time in port and 15% of time at sea.
  Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
  1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-171-1-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-115-1-LP	PASSAGE	W3	0	63.0	25	60	25
02-162-3-L	OFFICER SR	W3	0	63.0	25	60	25
02-162-3-L	OFFICER SR	W3	1	81.0	25	60	25
02-178-3-W	ROLL STABILIZATION TANK	W6	0	72.0	10	100	5
01-162-3-LP	PASSAGE	F3	0	38.7	25	300	5
01-162-5-A	ARCTIC GEAR LOCKER--OFFIC	F3	0	24.3	25	300	5
03-140-1-LP	PASSAGE	C3	0	14.0	10	100	5
03-162-3-Q	FAN ROOM	C3	0	49.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-178-0-E AUXILIARY GENERATOR ROOM (02 LEVEL)
Zero strength barrier above.

USE: E Machinery areas which are normally occupied.

AREA: 1440 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 12,960 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0204

FUEL LOAD: 18,266 BTUs/sq.ft.
Cables, paint, etc.,(5gpm x 6m/compartment area)

VENTILATION: 6,480 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 500 sq.in. VENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	0	3	85	10
Tbar Failure	5	3	20	40
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture
No line rupture as adjacent compartment

DETECTION:
Manual:
Occupied 0% of time in port and 15% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)
Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:
1 Hand portable carbon dioxide fire extinguisher
1 Hand portable dry chemical fire extinguisher (PKP)
2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:
1 Halon 1301 total flooding system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-178-0-E AUXILIARY GENERATOR ROOM (02 LEVEL)

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-162-0-TU	UPTAKE 2 (02 LEVEL)	W8	0	288.0	80	100	5
02-178-1-LP	PASSAGE	W6	0	360.0	10	100	5
02-178-2-W	ROLL STABILIZATION TANK	W6	0	360.0	10	100	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	W6	0	288.0	10	100	5
01-178-0-W	ROLL STAB TANK CROSS DUCT	F3	0	1216.0	25	300	5
01-178-1-LP	PASSAGE	F3	0	64.0	25	300	5
03-178-2-E	AUXILIARY GENERATOR ROOM	C0	0	640.0	0	0	100
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-178-1-LP PASSAGE

USE: LP Passageways

AREA: 160 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,440 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 288 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 250 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-178-1-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-162-1-TS	STAIRCASE	W5	1	36.0	5	80	5
02-178-0-E	EMERGENCY/HARBOR GENERATO	W6	0	360.0	10	100	5
02-178-3-W	ROLL STABILIZATION TANK	W6	0	360.0	10	100	5
02-218-0-QO	HELO EQUIP ROOM & OFFICE	W2	1	36.0	25	40	30
01-178-1-LP	PASSAGE	F3	0	160.0	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-218-0-QO HELO EQUIP ROOM & OFFICE

USE: QO Offices

AREA: 440 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,960 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

VENTILATION: 660 cu ft/min EXCHANGE TIME: 6.0 min.
VENT AREA: 200 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	60
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 35% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable monoammonium phosphate fire extinguisher
2 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-218-0-QO HELO EQUIP ROOM & OFFICE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-178-0-E	EMERGENCY/HARBOR GENERATO	W6	0	288.0	10	100	5
02-178-1-LP	PASSAGE	W2	1	36.0	25	40	30
02-178-2-W	ROLL STABILIZATION TANK	W6	0	54.0	10	100	5
02-178-3-W	ROLL STABILIZATION TANK	W6	0	18.0	10	100	5
02-228-0-Q	HANGAR	W2	1	342.0	25	40	30
01-218-1-LW	WC & SHR	F3	0	42.4	25	300	5
01-218-2-LW	WC & SHR	F3	0	47.6	25	300	5
01-218-3-A	GEAR LOCKER	F3	0	42.4	25	300	5
01-218-4-A	GEAR LOCKER	F3	0	37.2	25	300	5
01-218-5-LP	PASSAGE	F3	0	60.0	25	300	5
01-218-6-LP	PASSAGE	F3	0	40.0	25	300	5
01-218-8-A	SCIENCE BAGGAGE ROOM	F3	0	20.0	25	300	5
01-222-0-LW	WC & SHR	F3	0	27.0	25	300	5
01-222-1-L	SCIENTIST SR	F3	0	54.1	25	300	5
01-222-2-L	SCIENTIST SR	F3	0	54.1	25	300	5
01-225-0-L	SCIENTIST SR	F3	0	15.3	25	300	5
03-218-0-Q	AVIATION OFFICE	C3	0	440.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 02-228-0-Q HANGAR (02 LEVEL)
Zero strength barrier below.

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 2108 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 18,972 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0038

FUEL LOAD: 0 BTUs/sq.ft.

VENTILATION: 3,162 cu ft/min EXCHANGE TIME: 6.0 min.
VENT AREA: sq.in. VENT HEIGHT: 0 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin			0	0
Tbar Failure	0		0	0
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 25% of time at sea.
Automatic:
Photo electric smoke detection system (P)
Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:
2 Hand portable carbon dioxide fire extinguisher
5 Hand portable dry chemical fire extinguisher (PKP)
2 Hand portable Halon 1211 fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:
1 AFFF (3%) sprinkler system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

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BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 02-228-0-Q HANGAR (02 LEVEL)

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
02-218-0-QO	HELO EQUIP ROOM & OFFICE	W2	1	342.0	25	40	30
01-218-5-LP	PASSAGE	F3	0	84.7	25	300	5
01-218-6-LP	PASSAGE	F3	0	98.1	25	300	5
01-218-8-A	SCIENCE BAGGAGE ROOM	F3	0	45.2	25	300	5
01-222-1-L	SCIENTIST SR	F3	0	130.0	25	300	5
01-222-2-L	SCIENTIST SR	F3	0	77.1	25	300	5
01-225-0-L	SCIENTIST SR	F3	0	101.6	25	300	5
01-239-1-LW	WC & SHR	F3	0	27.0	25	300	5
01-239-2-LW	WC & SHR	F3	0	27.0	25	300	5
01-239-3-L	SCIENTIST SR	F3	0	165.0	25	300	5
01-239-4-L	SCIENTIST SR	F3	0	165.0	25	300	5
01-239-6-LP	PASSAGE	F3	0	128.0	25	300	5
01-239-8-A	FAN ROOM	F3	0	64.0	25	300	5
01-255-0-L	SCIENTIST SR	F3	0	137.5	25	300	5
01-255-1-LW	WC & SHR	F3	0	22.5	25	300	5
01-255-2-L	SCIENTIST SR	F3	0	150.8	25	300	5
01-255-3-L	SCIENTIST SR	F3	0	149.3	25	300	5
01-255-4-LW	WC & SHR	F3	0	25.2	25	300	5
01-255-5-LW	WC & SHR	F3	0	26.7	25	300	5
01-255-6-LP	PASSAGE	F3	0	101.6	25	300	5
01-255-8-A	XFMR FECT HELO	F3	0	25.6	25	300	5
01-261-2-TS	STAIRCASE	F3	0	38.4	25	300	5
01-271-1-L	SCIENTIST SR	F3	0	100.0	25	300	5
01-271-2-Q	SCIENTIST LIBRARY/CONFERE	F3	0	150.4	25	300	5
01-271-4-L	SCIENTIST SR	F3	0	37.6	25	300	5
01-277-1-LW	WC & SHR	F3	0	8.8	25	300	5
01-277-3-LW	WC & SHR	F3	0	8.7	25	300	5
01-277-5-L	SCIENTIST SR	F3	0	12.3	25	300	5
03-228-0-Q	HANGAR	F0	0	2088.0	0	0	100
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Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-105-0-Q RADIO ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 1313 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 11,817 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 16,000 BTUs/sq.ft.

VENTILATION: 2,954 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 225 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	8	0	20
Tbar Failure	15	8	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 25% of time in port and 100% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-105-0-Q RADIO ROOM

Barriers Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	W2	0	306.0	25	40	30
03-106-2-A	ELECTRONIC SHOP	W2	0	58.5	25	40	30
03-111-2-LP	PASSAGE	W2	0	36.0	25	40	30
03-111-2-LP	PASSAGE	W2	0	40.5	25	40	30
03-111-2-LP	PASSAGE	W2	0	157.5	25	40	30
03-111-2-LP	PASSAGE	W2	1	162.0	25	40	30
03-117-2-LW	WR & WC	W3	1	49.5	25	60	25
03-117-2-LW	WR & WC	W3	0	54.0	25	60	25
03-117-2-LW	WR & WC	W3	0	54.0	25	60	25
03-129-1-TS	STAIRCASE	W5	0	36.0	5	80	5
03-129-1-TS	STAIRCASE	W5	0	90.0	5	80	5
03-129-1-TS	STAIRCASE	W5	0	90.0	5	80	5
03-140-1-LP	PASSAGE	W2	0	27.0	25	40	30
03-140-1-LP	PASSAGE	W2	1	135.0	25	40	30
02-100-1-LL	CO LOUNGE	F3	0	417.2	25	300	5
02-100-2-L	CO CABIN	F3	0	272.0	25	300	5
02-100-3-TS	STAIRCASE	F3	0	57.0	25	300	5
02-115-1-LP	PASSAGE	F3	0	98.0	25	300	5
02-120-2-L	OFFICER SR	F3	0	260.4	25	300	5
02-129-1-Q	PANTRY	F3	0	160.4	25	300	5
02-132-2-LW	WR WC & SHR	F3	0	43.5	25	300	5
02-138-1-T	DUMB WAITER	F3	0	4.5	25	300	5
04-108-0-C	PILOT HOUSE	C3	0	681.0	10	100	5
04-126-0-Q	METEROLOGY LAB & CHART RO	C3	0	473.0	10	100	5
04-126-2-LW	WR & WC	C3	0	13.0	10	100	5
04-132-2-L	SEA CABIN	C3	0	14.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-105-1-A ELECTRONIC EQUIPMENT ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 1165 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 10,485 cu.ft.

UNACCEPTABLE LOSS: Code 1 (Fire reaches established burning.)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 120,000 BTUs/sq.ft.

VENTILATION: 17,475 cu ft/min EXCHANGE TIME: 0.6 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	10	10	0	20
Tbar Failure	5	10	0	40
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-105-1-A ELECTRONIC EQUIPMENT ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-0-Q	RADIO ROOM	W2	0	306.0	25	40	30
03-140-1-LP	PASSAGE	W2	0	54.0	25	40	30
03-140-1-LP	PASSAGE	W2	1	123.3	25	40	30
03-154-1-Q	HAM SHACK	W2	0	72.0	25	40	30
03-154-1-Q	HAM SHACK	W2	0	74.7	25	40	30
03-162-3-Q	FAN ROOM	W6	0	99.0	10	100	5
02-100-5-L	CHIEF SCIENTIST SR	F3	0	343.3	25	300	5
02-116-1-LW	WR WC & SHR	F3	0	48.0	25	300	5
02-122-1-LW	WR WC & SHR	F3	0	58.5	25	300	5
02-122-3-L	OFFICER SR	F3	0	291.4	25	300	5
02-136-1-LW	WR WC & SHR	F3	0	30.4	25	300	5
02-136-3-L	OFFICER SR	F3	0	192.6	25	300	5
02-146-1-L	OFFICER SR	F3	0	202.6	25	300	5
04-108-0-C	PILOT HOUSE	C3	0	576.9	10	100	5
04-126-0-Q	METEROLOGY LAB & CHART RO	C3	0	48.6	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-106-2-A ELECTRONIC SHOP

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 675 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 6,075 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 1,440,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 607 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	6	0	20
Tbar Failure	20	6	0	40
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 15% of time in port and 15% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-106-2-A ELECTRONIC SHOP

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-0-Q	RADIO ROOM	W2	0	58.5	25	40	30
03-111-2-LP	PASSAGE	W2	1	184.5	25	40	30
03-132-2-A	ELECTRONIC STOREROOM	W2	0	225.0	25	40	30
02-100-4-L	CO SR	F3	0	312.0	25	300	5
02-113-2-LW	WR WC & SHR	F3	0	63.0	25	300	5
02-120-4-LW	WR WC & SHR	F3	0	63.0	25	300	5
02-120-6-L	VISITOR SR	F3	0	237.0	25	300	5
04-108-0-C	PILOT HOUSE	C3	0	432.6	10	100	5
04-126-4-A	GEAR LOCKER	C3	0	23.4	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-111-2-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 334 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,011 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 602 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 875 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-111-2-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-0-Q	RADIO ROOM	W2	0	36.0	25	40	30
03-105-0-Q	RADIO ROOM	W2	0	40.5	25	40	30
03-105-0-Q	RADIO ROOM	W2	0	157.5	25	40	30
03-105-0-Q	RADIO ROOM	W2	1	162.0	25	40	30
03-106-2-A	ELECTRONIC SHOP	W2	1	184.5	25	40	30
03-117-2-LW	WR & WC	W3	0	49.5	25	60	25
03-132-2-A	ELECTRONIC STOREROOM	W2	0	36.0	25	40	30
03-132-2-A	ELECTRONIC STOREROOM	W2	0	72.0	25	40	30
03-132-2-A	ELECTRONIC STOREROOM	W2	1	193.5	25	40	30
03-140-1-LP	PASSAGE	W0	0	56.7	0	0	100
03-145-0-TU	UPTAKE 1	W8	0	144.0	80	100	5
03-145-2-TS	STAIRCASE	W5	0	54.0	5	80	5
03-145-2-TS	STAIRCASE	W5	1	105.3	5	80	5
03-157-2-A	GEAR LOCKER	W2	1	40.5	25	40	30
03-162-2-Q	FAN ROOM	W6	1	36.0	10	100	5
02-100-2-L	CO CABIN	F3	0	34.0	25	300	5
02-120-2-L	OFFICER SR	F3	0	19.6	25	300	5
02-121-2-LP	PASSAGE	F3	0	254.0	25	300	5
02-129-1-Q	PANTRY	F3	0	6.9	25	300	5
02-132-2-LW	WR WC & SHR	F3	0	14.9	25	300	5
02-136-2-LW	WR WC & SHR	F3	0	5.2	25	300	5
04-108-0-C	PILOT HOUSE	C3	0	56.0	10	100	5
04-126-2-LW	WR & WC	C3	0	22.9	10	100	5
04-126-4-A	GEAR LOCKER	C3	0	3.1	10	100	5
04-132-2-L	SEA CABIN	C3	0	28.0	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-117-2-LW WR & WC

USE: LW Wash room, water closet and shower areas

AREA: 33 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 297 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 74 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 150 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-117-2-LW WR & WC

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-0-Q	RADIO ROOM	W3	1	49.5	25	60	25
03-105-0-Q	RADIO ROOM	W3	0	54.0	25	60	25
03-105-0-Q	RADIO ROOM	W3	0	54.0	25	60	25
03-111-2-LP	PASSAGE	W3	0	49.5	25	60	25
02-100-2-L	CO CABIN	F3	0	24.0	25	300	5
02-120-2-L	OFFICER SR	F3	0	9.0	25	300	5
04-108-0-C	PILOT HOUSE	C3	0	33.0	10	100	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-129-1-TS STAIRCASE

USE: TS Staircases

AREA: 40 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 360 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 72 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-129-1-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-0-Q	RADIO ROOM	W5	0	36.0	5	80	5
03-105-0-Q	RADIO ROOM	W5	0	90.0	5	80	5
03-105-0-Q	RADIO ROOM	W5	0	90.0	5	80	5
03-140-1-LP	PASSAGE	W5	1	36.0	5	80	5
02-100-1-LL	CO LOUNGE	F3	0	1.2	25	300	5
02-129-1-Q	PANTRY	F3	0	37.3	25	300	5
02-138-1-T	DUMB WAITER	F3	0	1.5	25	300	5
04-126-0-Q	METEROLOGY LAB & CHART RO	C3	1	40.0	10	100	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-132-2-A ELECTRONIC STOREROOM

USE: AS Storerooms

AREA: 651 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 5,863 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 28,000 BTUs/sq.ft.

VENTILATION: 698 cu ft/min EXCHANGE TIME: 8.4 min.
VENT AREA: 2000 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	15	6	0	50
Tbar Failure	10	6	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 25% of time in port and 50% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-132-2-A ELECTRONIC STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-106-2-A	ELECTRONIC SHOP	W2	0	225.0	25	40	30
03-111-2-LP	PASSAGE	W2	0	36.0	25	40	30
03-111-2-LP	PASSAGE	W2	0	72.0	25	40	30
03-111-2-LP	PASSAGE	W2	1	193.5	25	40	30
03-162-2-Q	FAN ROOM	W6	0	189.0	10	100	5
02-120-6-L	VISITOR SR	F3	0	100.0	25	300	5
02-136-2-LW	WR WC & SHR	F3	0	37.2	25	300	5
02-136-4-L	OFFICER SR	F3	0	230.8	25	300	5
02-148-2-L	OFFICER SR	F3	0	207.2	25	300	5
02-152-2-LW	WR WC & SHR	F3	0	72.1	25	300	5
02-162-4-LW	WR WC & SHR	F3	0	1.4	25	300	5
02-162-6-L	OFFICER SR	F3	0	2.8	25	300	5
04-108-0-C	PILOT HOUSE	C3	0	149.8	10	100	5
04-132-2-L	SEA CABIN	C3	0	25.2	10	100	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-140-1-LP PASSAGE
Zero strength barrier adjacent.

USE: LP Passageways

AREA: 386 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,482 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.
Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 696 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 1250 sq.in. VENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	95	20	0	40
Tbar Failure	80	20	0	60
Dbar Failure	40	*	0	0

* calculated as (100 - % Heat Release)/100 X
FRI Time or 2 min., whichever is greater

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-140-1-LP PASSAGE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-0-Q	RADIO ROOM	W2	0	27.0	25	40	30
03-105-0-Q	RADIO ROOM	W2	1	135.0	25	40	30
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	W2	0	54.0	25	40	30
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	W2	1	123.3	25	40	30
03-111-2-LP	PASSAGE	W0	0	56.7	0	0	100
03-129-1-TS	STAIRCASE	W5	1	36.0	5	80	5
03-145-0-TU	UPTAKE 1	W8	0	144.0	80	100	5
03-147-1-A	STOREROOM	W2	0	54.0	25	40	30
03-147-1-A	STOREROOM	W2	1	105.3	25	40	30
03-154-1-Q	HAM SHACK	W2	1	74.7	25	40	30
03-157-1-A	STOREROOM	W2	1	40.5	25	40	30
03-162-1-A	GEAR LOCKER	W2	0	13.5	25	40	30
03-162-1-A	GEAR LOCKER	W2	1	31.5	25	40	30
03-162-3-Q	FAN ROOM	W6	1	144.0	10	100	5
03-165-1-TS	STAIRCASE	W5	1	110.7	5	80	5
02-115-1-LP	PASSAGE	F3	0	241.2	25	300	5
02-129-1-Q	PANTRY	F3	0	32.2	25	300	5
02-136-1-LW	WR WC & SHR	F3	0	13.8	25	300	5
02-136-3-L	OFFICER SR	F3	0	11.4	25	300	5
02-138-1-T	DUMB WAITER	F3	0	9.2	25	300	5
02-146-1-L	OFFICER SR	F3	0	14.0	25	300	5
02-154-1-LW	WR WC & SHR	F3	0	14.6	25	300	5
02-162-1-TS	STAIRCASE	F3	0	18.5	25	300	5
02-162-3-L	OFFICER SR	F3	0	18.0	25	300	5
02-171-1-LW	WR WC & SHR	F3	0	14.0	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-145-2-TS STAIRCASE

USE: TS Staircases

AREA: 70 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 631 cu.ft

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 126 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-145-2-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-111-2-LP	PASSAGE	W5	0	54.0	5	80	5
03-111-2-LP	PASSAGE	W5	1	105.3	5	80	5
03-145-0-TU	UPTAKE 1	W8	0	105.3	80	100	5
03-157-2-A	GEAR LOCKER	W5	0	54.0	5	80	5
02-145-2-TS	STAIRCASE	F3	1	70.2	25	300	5
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			2				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-147-1-A STOREROOM

USE: AS Storerooms

AREA: 70 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 631 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 157 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	4	0	30
Tbar Failure	20	4	0	20
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-147-1-A STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-140-1-LP	PASSAGE	W2	0	54.0	25	40	30
03-140-1-LP	PASSAGE	W2	1	105.3	25	40	30
03-145-0-TU	UPTAKE 1	W8	0	105.3	80	100	5
03-157-1-A	STOREROOM	W2	0	54.0	25	40	30
02-145-1-A	STOREROOM	F3	0	70.2	25	300	5
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Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-154-1-Q HAM SHACK

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 66 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 597 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 16,000 BTUs/sq.ft.

VENTILATION: 119 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	4	0	20
Tbar Failure	15	4	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 25% of time in port and 15% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-154-1-Q HAM SHACK

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	W2	0	72.0	25	40	30
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	W2	0	74.7	25	40	30
03-140-1-LP	PASSAGE	W2	1	74.7	25	40	30
03-162-3-Q	FAN ROOM	W6	0	72.0	10	100	5
02-146-1-L	OFFICER SR	F3	0	29.9	25	300	5
02-154-1-LW	WR WC & SHR	F3	0	36.5	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-157-1-A STOREROOM

USE: AS Storerooms

AREA: 27 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 243 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,440,000 BTUs/sq.ft.
Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 24 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	3	0	30
Tbar Failure	20	3	0	20
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 x FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 5% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-157-1-A STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-140-1-LP	PASSAGE	W2	1	40.5	25	40	30
03-145-0-TU	UPTAKE 1	W8	0	38.7	80	100	5
03-147-1-A	STOREROOM	W2	0	54.0	25	40	30
03-162-1-A	GEAR LOCKER	W6	0	54.0	10	100	5
02-145-1-A	STOREROOM	F3	0	25.8	25	300	5
02-162-1-TS	STAIRCASE	F3	0	1.2	25	300	5
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			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-157-2-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 27 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 243 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.
Fuel load in psf = 15 x height of deck.

VENTILATION: 24 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	3	0	40
Tbar Failure	10	3	0	30
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-157-2-A GEAR LOCKER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-111-2-LP	PASSAGE	W2	1	40.5	25	40	30
03-145-0-TU	UPTAKE 1	W8	0	38.7	80	100	5
03-145-2-TS	STAIRCASE	W5	0	54.0	5	80	5
03-162-2-Q	FAN ROOM	W6	0	54.0	10	100	5
02-145-2-TS	STAIRCASE	F3	0	1.8	25	300	5
02-158-2-A	GEAR LOCKER	F3	0	24.0	25	300	5
02-162-2-A	STOREROOM	F3	0	1.2	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-162-1-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 21 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 189 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.
Fuel load in psf = 15 x height of deck.

VENTILATION: 18 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	3	0	40
Tbar Failure	10	3	0	30
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-162-1-A GEAR LOCKER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-140-1-LP	PASSAGE	W2	0	13.5	25	40	30
03-140-1-LP	PASSAGE	W2	1	31.5	25	40	30
03-157-1-A	STOREROOM	W6	0	54.0	10	100	5
03-162-0-TU	UPTAKE 2	W8	0	31.5	80	100	5
03-165-1-TS	STAIRCASE	W5	0	40.5	5	80	5
02-162-1-TS	STAIRCASE	F3	0	21.0	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-162-2-Q FAN ROOM

USE: QF Fan Rooms

AREA: 489 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 4,408 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 2,204 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	20
Tbar Failure	100	999	0	50
Dbar Failure	30	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 0% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-162-2-Q FAN ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-111-2-LP	PASSAGE	W6	1	36.0	10	100	5
03-132-2-A	ELECTRONIC STOREROOM	W6	0	189.0	10	100	5
03-157-2-A	GEAR LOCKER	W6	0	54.0	10	100	5
03-162-0-TU	UPTAKE 2	W8	0	142.2	80	100	5
03-178-2-E	AUXILIARY GENERATOR ROOM	W6	0	36.0	10	100	5
02-121-2-LP	PASSAGE	F3	0	63.2	25	300	5
02-162-2-A	STOREROOM	F3	0	94.8	25	300	5
02-162-4-LW	WR WC & SHR	F3	0	57.8	25	300	5
02-162-6-L	OFFICER SR	F3	0	274.0	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-162-3-Q FAN ROOM

USE: QF Fan Rooms

AREA: 304 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,736 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 1,368 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	20
Tbar Failure	100	999	0	50
Dbar Failure	30	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 0% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

Feb 02, 1989

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-162-3-Q FAN ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	W6	0	99.0	10	100	5
03-140-1-LP	PASSAGE	W6	1	144.0	10	100	5
03-154-1-Q	HAM SHACK	W6	0	72.0	10	100	5
02-162-3-L	OFFICER SR	F3	0	255.0	25	300	5
02-171-1-LW	WR WC & SHR	F3	0	49.0	25	300	5
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			1				

Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-165-1-TS STAIRCASE

USE: TS Staircases

AREA: 55 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 497 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

VENTILATION: 99 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	90	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 50% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-165-1-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-140-1-LP	PASSAGE	W5	1	110.7	5	80	5
03-162-0-TU	UPTAKE 2	W8	0	110.7	80	100	5
03-162-1-A	GEAR LOCKER	W5	0	40.5	5	80	5
02-162-1-TS	STAIRCASE	F3	1	55.3	25	300	5
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COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-178-2-E AUXILIARY GENERATOR ROOM (03 LEVEL)
Zero strength barrier below.

USE: E Machinery areas which are normally occupied.

AREA: 800 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 7,200 cu.ft

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0204

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 3,600 cu ft/min EXCHANGE TIME: 2.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	30	3	85	10
Tbar Failure	20	3	20	40
Dbar Failure	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 25% of time in port and 50% of time at sea.
Automatic:

FIRST AID FIRE PROTECTION:

AUTOMATED FIRE PROTECTION SYSTEMS:
1 Halon 1301 total flooding system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-178-2-E AUXILIARY GENERATOR ROOM (03 LEVEL)

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-162-0-TU	UPTAKE 2 (03 LEVEL)	W8	0	144.0	80	100	5
03-162-2-Q	FAN ROOM	W6	0	36.0	10	100	5
03-218-0-Q	AVIATION OFFICE	W6	0	180.0	10	100	5
02-178-0-E	AUXILIARY GENERATOR ROOM	F0	0	640.0	0	0	100
02-178-2-W	ROLL STABILIZATION TANK	F3	0	160.0	25	300	5
			--				
			0				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-218-0-Q AVIATION OFFICE

USE: QO Offices

AREA: 460 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 4,140 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 828 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 200 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	60
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 35% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-218-0-Q AVIATION OFFICE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-178-2-E	AUXILIARY GENERATOR ROOM	W6	0	180.0	10	100	5
03-228-0-Q	HANGAR (03 LEVEL)	W2	1	360.0	25	40	30
02-218-0-QO	HELO EQUIP ROOM & OFFICE	F3	0	440.0	25	300	5
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Feb 02, 1989

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 03-228-0-Q HANGAR (03 LEVEL)
Zero strength barrier above.

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 2088 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 18,792 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0038

FUEL LOAD: 0 BTUs/sq.ft.

VENTILATION: 3,132 cu ft/min EXCHANGE TIME: 6.0 min.
VENT AREA: sq.in. VENT HEIGHT: 0 in.

FIRE STARTED DUE TO:	I		FRI Time	A	M
Fire Origin				0	0
Tbar Failure	0			0	0
Dbar Failure	0	*		0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 25% of time at sea.
Automatic:
Photo electric smoke detection system (P)
Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

AUTOMATED FIRE PROTECTION SYSTEMS:
1 AFFF (3%) sprinkler system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 03-228-0-Q HANGAR (03 LEVEL)

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
03-218-0-Q	AVIATION OFFICE	W2	0	360.0	25	40	30
02-228-0-Q	HANGAR	C0	0	2088.0	0	0	100
			--				
			0				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 04-108-0-C PILOT HOUSE

USE: C Ship and fire control operating areas normally occupied.

AREA: 1706 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 15,359 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 12,000 BTUs/sq.ft.

VENTILATION: 3,267 cu ft/min EXCHANGE TIME: 4.7 min.
VENT AREA: 300 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	70	12	0	90
Tbar Failure	55	12	0	70
Dbar Failure	20	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 30% of time in port and 100% of time at sea.
Automatic:
Rate of temperature rise detection system (RR)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 04-108-0-C PILOT HOUSE

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
04-126-0-Q	METEROLOGY LAB & CHART RO	W2	1	121.5	25	40	30
04-126-0-Q	METEROLOGY LAB & CHART RO	W2	3	374.4	25	40	30
04-126-2-LW	WR & WC	W3	0	49.5	25	60	25
04-126-4-A	GEAR LOCKER	W2	0	36.9	25	40	30
04-126-4-A	GEAR LOCKER	W2	1	58.5	25	40	30
04-132-2-L	SEA CABIN	W2	0	63.0	25	40	30
03-105-0-Q	RADIO ROOM	F3	0	681.0	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	F3	0	576.9	25	300	5
03-106-2-A	ELECTRONIC SHOP	F3	0	432.6	25	300	5
03-111-2-LP	PASSAGE	F3	0	56.0	25	300	5
03-117-2-LW	WR & WC	F3	0	33.0	25	300	5
03-132-2-A	ELECTRONIC STOREROOM	F3	0	149.8	25	300	5
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			5				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 04-126-0-Q METEROLOGY LAB & CHART ROOM

USE: QO Offices

AREA: 681 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 6,135 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

VENTILATION: 2,045 cu ft/min EXCHANGE TIME: 3.0 min.
VENT AREA: 225 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	60
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 35% of time at sea.
Automatic:
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:
2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 04-126-0-Q METEROLOGY LAB & CHART ROOM

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
04-108-0-C	PILOT HOUSE	W2	1	121.5	25	40	30
04-108-0-C	PILOT HOUSE	W2	3	374.4	25	40	30
04-126-2-LW	WR & WC	W3	1	58.5	25	60	25
04-132-2-L	SEA CABIN	W2	1	63.0	25	40	30
03-105-0-Q	RADIO ROOM	F3	0	473.0	25	300	5
03-105-1-A	ELECTRONIC EQUIPMENT ROOM	F3	0	48.6	25	300	5
03-129-1-TS	STAIRCASE	F3	1	40.0	25	300	5
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			7				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 04-126-2-LW WR & WC

USE: LW Wash room, water closet and shower areas

AREA: 35 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 323 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 80 cu ft/min EXCHANGE TIME: 4.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	100	999	0	30
Tbar Failure	100	999	0	40
Dbar Failure	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 15% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 04-126-2-LW WR & WC

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
04-108-0-C	PILOT HOUSE	W3	0	49.5	25	60	25
04-126-0-Q	METEROLOGY LAB & CHART RO	W3	1	58.5	25	60	25
04-126-4-A	GEAR LOCKER	W3	0	58.5	25	60	25
04-132-2-L	SEA CABIN	W3	0	49.5	25	60	25
03-105-0-Q	RADIO ROOM	F3	0	13.0	25	300	5
03-111-2-LP	PASSAGE	F3	0	22.9	25	300	5
			--				
			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 04-126-4-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 26 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 238 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.
Fuel load in psf = 15 x height of deck

VENTILATION: 23 cu ft/min EXCHANGE TIME: 10.0 min.
VENT AREA: 10 sq.in. VENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	3	0	40
Tbar Failure	10	3	0	30
Dbar Failure	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 5% of time in port and 10% of time at sea.
Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 04-126-4-A GEAR LOCKER

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
04-108-0-C	PILOT HOUSE	W2	0	36.9	25	40	30
04-108-0-C	PILOT HOUSE	W2	1	58.5	25	40	30
04-126-2-LW	WR & WC	W3	0	58.5	25	60	25
04-132-2-L	SEA CABIN	W2	0	36.9	25	40	30
03-106-2-A	ELECTRONIC SHOP	F3	0	23.4	25	300	5
03-111-2-LP	PASSAGE	F3	0	3.1	25	300	5
			--				
			1				

COMPARTMENT FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/1987)

Compartment: 04-132-2-L SEA CABIN

USE: L1 Berthing Space for 1

AREA: 129 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,165 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 19,047 BTUs/sq.ft.
No. of people x 200/compt.area

VENTILATION: 233 cu ft/min EXCHANGE TIME: 5.0 min.
VENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I	FRI Time	A	M
Fire Origin	20	5	0	30
Tbar Failure	15	5	0	40
Dbar Failure	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:
Manual:
Occupied 0% of time in port and 10% of time at sea.
Automatic:
Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:
1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.

BARRIER FIRE SAFETY SUMMARY
FOR
POLAR ICEBREAKER REPLACEMENT
(drawings dated 5/12/87)

Compartment: 04-132-2-L SEA CABIN

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
04-108-0-C	PILOT HOUSE	W2	0	63.0	25	40	30
04-126-0-Q	METEROLOGY LAB & CHART RO	W2	1	63.0	25	40	30
04-126-2-LW	WR & WC	W3	0	49.5	25	60	25
04-126-4-A	GEAR LOCKER	W2	0	36.9	25	40	30
03-105-0-Q	RADIO ROOM	F3	0	14.0	25	300	5
03-111-2-LP	PASSAGE	F3	0	28.0	25	300	5
03-132-2-A	ELECTRONIC STOREROOM	F3	0	25.2	25	300	5
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